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NASAL FLAP AND MODIFIED LANGENBECK OPERATION FOR CLEFT PALATE.

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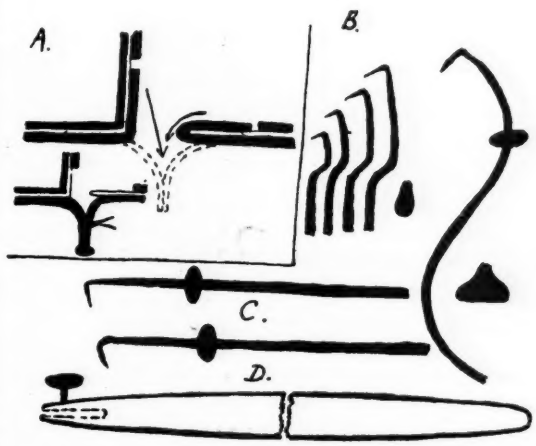
One of the commonest and most annoying sequelæ of palate operations is the yielding of the line of union. This may be due to infection, or tension, or both, particularly the latter. The elimination of undue tension—one of the most important factors in this operation—has not yet been achieved. This defect can, in my opinion, be satisfactorily overcome in the majority of cases by the adoption of the following operation and technique, particularly in regard to the cases in which this undue tension affects the hard palate. The principles of the operation are the elimination of tension and the reduction of trauma and of interference with the blood supply. This is effected by the use of flaps obtained from the upper aspects of the hard and soft palates. The flaps are turned down into the mouth and united in a V-shaped manner, so that the raw surfaces of the flaps are apposed to one another. A firmer and more certain bond is obtained in this way, and the likelihood of mal- or non-union is reduced. By means of a graduated series of knives and raspatories, a flap of any desired width can be fashioned. The same width of the flap can be maintained throughout its whole extent. The width of the flap required having been decided on, the suitable knife is inserted viâ the mouth, through the cleft, into the nasal chamber. It is drawn with some force through the muco-periosteum of the nasal floor from end to end, the shaft of the knife being kept in contact with the bony edge of the cleft. The flap, having been demarcated, is separated from the nasal surface of the hard palate; it is then drawn inwards and turned down through the cleft into the mouth. The raw surfaces are apposed and united by a few vertically-placed mattress sutures. The edge is secured by a continuous catgut suture. The mattress sutures are placed vertically and not horizontally, in order that the blood supply to the margins of the flap is less interfered with. In this way, a lateral paradontal incision and the separation of the palatal muco-periosteum may be avoided. The latter involves danger to the blood supply, and inflicts a good deal of trauma on the parts. Surgeons who prefer, however, to combine the two methods, can raise the muco-periosteum through a small puncture near the teeth. So much for the hard palate.

In regard to the soft palate, a very necessary but most defective step in the operations undertaken at the present time is the inevitable section of the *tensor* and even of the *levator palati*, and the separation of the nasal portion of the soft from the hard palate. These two factors probably account for some, if not the greater part, of the common after-trouble in phonation. I have endeavoured to overcome this cardinal defect in the case of the soft palate in the same manner as in the case of the hard palate. Whether the results will prove as satisfactory I cannot say at present, since my experience of this operation is still too small to draw conclusions. In order to achieve this end, the tip of the soft palate is drawn forward on to the hard palate, and a longitudinal incision is made on its naso-pharyngeal surface, through half of its thickness. This incision follows the same line as the intranasal section of the hard palate. The flap so marked out is raised, turned into the cleft and drawn down into the mouth. In this manner, the original upper surface will face the tongue. The two palatal incisions are then united at the posterior edge of the hard palate, by means of curved scissors. This converts them into one long incision, and the flap extends on the upper aspect of the hard and soft palates, along the whole length of the fissure.

It appears to me it can be claimed that this operation does not impair the palatal blood supply, as does the present lateral section operation. The important muscles of phonation are scarcely interfered with. Tension is obviated; opposing surfaces are obtained, which are more inclined to unite than are apposed edges. The disadvantage accruing from the lessened thickness of the flaps in the case of the soft palate is more than compensated for by the fact that the arteries of supply are intact. Since no tension is present and the parts are not subjected to the amount of trauma involved in the ordinary operation, the conditions are more favourable for union.

The accompanying illustration will render the method clear. In A the incision is shown for cases



in which the septum reaches the palate, in which the flap on that side is obtained from the septum. B illustrates the graduated knives and raspatories

in profile, with a screw disc on the latter for varying and maintaining the distance from the blade. This disc renders the knife adaptable for any width of flap. C is the knife and raspatory required for the septum, and D is the universal handle. The actual shape and size of the blades of the knives and raspatories are also indicated. The knives have a cutting edge all round. The shafts are about three inches long and the handle six inches.

I would commend this nasal flap operation to surgeons, particularly for the hard palate, from which the chief trouble arises. The operation can be performed in two stages if desired.

THE BACTERIAL PURIFICATION OF SEWAGE.

By **R. Boan,**
Civil Engineer, etc., Railway Department, Victoria.

(*Continued from page* 449.)

This last process is called nitrification. In short, it means that the ammonical nitrogen (free and albuminoid ammonia) is converted into nitrous and nitric nitrogen.

The classic experiments of Scott-Moncrieff at Ashtead, in 1898, furnish us with an excellent illustration of the process by which sewage after liquifaction and subsequent treatment in ærobic filters is converted into harmless mineral salts. Scott-Moncrieff arranged his filters so that nine trays were superimposed, the effluent from the liquefaction tank being tipped automatically on to the first tray, through which the liquid trickled on to the second tray, and so on. Each tray was 2ft. long, 7in. broad, and 7in. deep, filled with coke 1in. diameter; between each tray a space of 2in. was allowed. The effluent was discharged at the rate of 1,300,000 gallons per acre per day, the time occupied by the water in passing from the first to the last tray being from eight to ten minutes. The following table shows the conversion of the free and albuminoid ammonia to nitrous and nitric nitrogen. (Kinnicutt, p. 232.)

Results of Trickling Filtration Through Scott-Moncrieff's Trays.

(Scott-Moncrieff, 1899.)

Parts per Million.

Effluents of—	Nitrogen as—				
	Free Ammonia.	Albuminoid Ammonia.	Nitrites.	Nitrates.	Oxygen consumed in 4 hours at 80° F.
Cultivation tank	103.0	12.3	0.0	1.2	98.4
First tray	86.5	10.3	9.9	1.0	66.9
Second tray ..	74.2	8.2	9.0	4.8	57.7
Third tray ..	41.2	4.9	7.8	18.7	44.9
Fourth tray ..	33.0	2.9	6.6	27.6	17.3
Fifth tray ..	12.4	1.2	4.8	46.8	12.8
Sixth tray ..	14.4	2.9	5.1	44.2	15.0
Seventh tray ..	2.9	2.5	0.0	66.0	7.6
Eighth tray ..	1.7	5.3	0.0	73.2	4.0
Ninth tray ..	2.1	4.9	Slight tr.	90.0	5.9

It may be asked, "How can such profound changes be brought about within a short period of eight to ten minutes, during which the liquid is trickling through the filter as in the above case. The best explanation the author can offer is that given by Professor Dunbar (Dunbar, p. 140), known as the absorption or colloidal theory of sewage purification.

"Frankland assumed that the dissolved organic matters were oxidized by the oxygen of the air contained in the pores of the soil as the sewage percolated through. After the experiments of Schloesing and Müntz, as well as those of Warrington and Winogradskey, the action of the filters was explained by the Massachusetts experimenters to be due to the bacteria in the sewage and in the filter directly mineralizing the organic matters during the slow flow of the sewage thorugh the filter."

"This was a possible explanation so long as it could be assumed that the sewage remained for about three days in the filter, but when it was shown that the sewage left a 3ft. filter thoroughly purified within ten minutes, the above explanation fell to the ground."

Dunbar carried out experiments which demonstrated that the dissolved organic matters are first separated from the sewage during its passage through the filter and are retained in the filter to be decomposed and oxidized by the micro-organisms (nitrosomonas and nitrobacter) during the succeeding periods of rest. (This last he calls the absorption or colloidal theory of sewage purification).

That we may better understand the process termed nitrification, a brief outline of the bacteriology of intermittent filtration will now be given; for further particulars, see Kinnicutt, pp. 232-235.

Pasteur (1862) expressed the conviction that the process of nitrification would eventually be shown to be due to the activity of living organisms. This suggestion was verified in 1877 by Schloesing and Müntz, who proved that living organisms of some sort were the cause of nitrification. Warrington, Frankland and many other observers confirmed these results, but for a long time all attempts to isolate the actual organisms failed. Finally, the Franklands succeeded in isolating from a nitrifying solution a short, stout bacillus which formed nitrites, but which refused to grow on gelatin media. (Frankland, 1890.)

In 1891 Winogradskey showed that the change from nitrous to nitric acid is due to the action of another group of organisms (nitrobacter) which can be grown on ordinary media only with great difficulty, and which by symbiosis with the *bacillus nitrosomonas* complete the nitrifying change.

In nature, the nitrosomonas organisms are dependent upon ordinary putrefactive bacteria, which set free their food supply, *i.e.*, ammonia, from its organic compounds. The nitrate formers only thrive in the presence of a porous inorganic substratum on which they can form their zooglea films. In short, the filter beds are simply cultivation areas of the nitrifying organisms.

The nitrate formers (*B. nitrobacter*) are checked in their development by the presence of free ammonia and are dependent upon the nitrite formers for protection against ammonia; so also the nitrite formers are dependent upon the putrefactive bacteria for the formation of ammonia from more complex bodies.

The principal requirements for the process of nitrification are:—

(1) A porous substratum must be provided for

the growth of the active organisms, *B. nitrosomonas* and *B. nitrobacter*.

(2) The applied sewage must not be too strong. Nitrosomonas development is checked by 0.05% free ammonia, *i.e.*, 50 parts per 100,000.

(3) An alkaline base must be provided to unite with the nitric acid formed, free acids (0.5%) stop nitrifying action. The base should be lime or magnesia in preference to soda and potash. From 0.1% to 0.5% sodium nitrate retards nitrosification, as against 1% calcium nitrate.

Analyses of Crude Sewage and Filter Effluent in Parts per 100,000.

	Raw Sewage.	Filtrate.	Raw Sewage.	Filtrate.
Solids—				
Dissolved	97.03	97.83		
Suspended	60.09	0.00		
			157.93	97.83
Chlorine			11.47	8.53
Oxygen consumed			2.944	0.833
Nitrogen—				
As nitrite	—	0.108		
As nitrate	—	3.330		
As free ammonia	3.007	0.343		
As organic nitrogen	3.007	0.39		
			6.122	4.171
Albuminoid ammonia			0.493	4.147

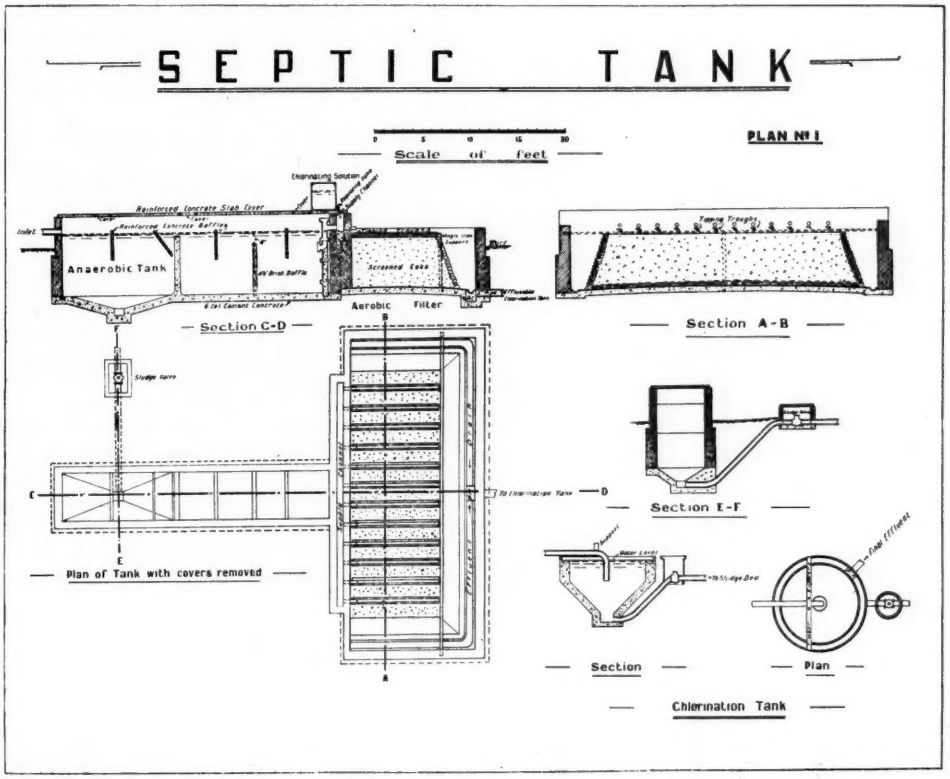


Fig. 1.

(4) Free drainage must be provided to remove the end products of the reaction.

(5) There must be abundant oxygen to carry on the specified fermentations.

In nature, all organic matter is eventually converted into nitrates, and it is only in this way the nitrogen taken from the soil is restored to it. We thus see that the effluent from the ærobic filter will, to some extent, return the nitrogen to the soil if we use it for irrigation.

Analyses of effluents show an appreciable quantity of nitrates present. Hereunder is a typical analysis:

Plan "I" shows a typical septic tank, as designed by the author.

In the early stages of development, it was assumed that practically everything sent into the tanks would be liquified, and the sludge difficulty be overcome, but experience showed that, although generally a very satisfactory effluent could be obtained, yet the sludge problem was by no means solved.

Usually, the sewage in our case is a highly concentrated one, generally consisting of flush water, fæcal matter, and the usual accompaniment of paper, cotton waste, etc., the whole comprising a sufficiently difficult material to treat; but there is less ground

for serious complaint than in the case of the sanitary engineer in tropical countries where such things as bits of brick, hemp rope and the like are used by the natives.

In consequence of the rapid sludging up of the first chamber, when very concentrated sewage was dealt with, a series of tests was made, and proved that complete liquefaction of the solids did not take place during the 12 hours' cycle on which the tanks were designed. The evidence pointed to three or four days' tankage being necessary. It was evident that there were grave objections to an extension of the time during which the sewage would be retained in the tank, first because of the danger of offensive gases being generated and so giving rise to aerial nuisance, the very last desire of the engineer being the advertisement of the fact that sewage is being treated, and, secondly, the increased cost of the tanks, due to the provision of extra storage.

As a solution of the difficulty, it was decided to dilute the sewage where possible, and to draw the sludge off at more frequent intervals than was at first intended. The method by which the solids are withdrawn from the tank is simply the provision of a pipe dipping into the conical bottom of the first chamber and rising up to a valve chamber about two feet below the top level of the sewage in the tank. The sludge is forced into the pipe by the water pressure and runs out easily, its appearance being that of a somewhat viscous, peaty mass, with a slight tarry odour. The sludge pipe discharges the liquid into sand filters, where the water drains away, or into furrows ploughed into the soil. The sludge dries rapidly. No trouble has been experienced, and so far no complaints have been made.

About this time (1908-1909) other experimenters were at work on the question of sludge disposal, and I will summarize the conclusions arrived at briefly; but before doing so will show one of the earliest methods devised to separate the sludge from the sewage as it arrived at the works.

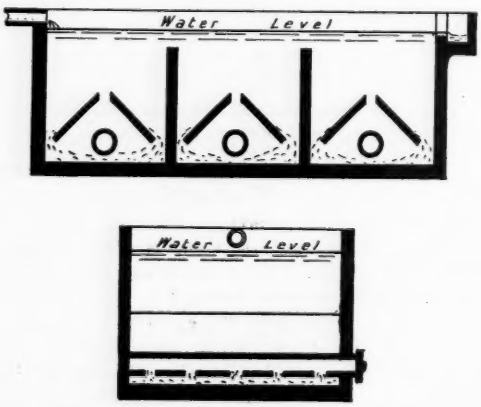


Fig. 2.

In 1891 Birch obtained patents in various countries for his sedimentation tank. (Fig. 2.)

It will be seen that Birch used an ordinary, shallow tank, with inclined walls, so arranged that a sludge chamber was divided from the part through which the water flowed. The sludge slides down the walls into the openings giving access to the sludge chamber. In the latter are horizontal pipes perforated on the bottom. On opening the valves which control these pipes, the sludge is forced out by the water pressure.

The design of this tank is not a good one; in fact, the first chamber would be overtaxed, the remaining ones being of very little use, and as no provision is made for decomposition, the sludge would have to be drawn off at very frequent intervals and disposed of. The sludge, being comparatively fresh, would be in a most objectionable condition to be dealt with, but, notwithstanding these faults, the idea has been most fruitful in pointing the way to modern methods of dealing with the sludge problem.

As a practical outcome of the sludge disposal difficulty, experimenters in England, France and Germany have devised various methods of separating or abstracting the solids in suspension, etc., but in this paper I do not intend to review the question of priority, because of contentious views held by various writers, but will simply demonstrate the means by which separation is effected.

In this connexion, it should be pointed out that the separation of the minutest (colloidal) suspended particles is favoured by affording large surfaces on which these particles can settle, and no doubt the best arrangement hitherto designed for that purpose is that designed by Travis. This consists of placing thin, inclined walls in the longitudinal direction of the tank, as is shown in the sketch of Travis' Hydrolytic Tank, which will now be described. (Fig. 3.)

In a paper written by Dr. W. Owen Travis, M.D., M.S., and Edwin Ault, C.E., it is stated that the conception of the hydrolytic tank and oxidizing beds is the result of a close study of the numerous experiments conducted at Lawrence, U.S.A., and under the ægis of the State Board of Health of Massachusetts, and published by that board in a series of works which, in their entirety, constitute a classical record of the bacterial purification of sewage.

Briefly, the experiments carried out by the Board determine:—

1. That as the liquid portion of water-carried sewage contains matter in solution only, and as the water has already fulfilled its principal function, *viz.*, the conveyance of the grosser particles, so it should be permitted to pass through the tank in the limited time necessary for purely sedimentary purposes.

2. That as only the suspended matters of the sewage require to be subjected to a prolonged digestive process, these matters, together with the minimum amount of liquid, which is found to be necessary for the free flowing of the particles and for the carrying away of the liquefied products, should alone undergo the septic tank or hydrolytic treatment.

3. That as, in any sedimentary tank, some of the matters in suspension, the specific gravity of which differs from that of the liquid, will not be deposited, and as in all septic tanks considerable quantities of deposited sludge, disturbed by the gases of decomposition, will constantly flow out of the tank with

the liquid, so a further purification in an upward anærobic filter is absolutely necessary.

4. That as the gaseous and volatile products are, like the liquid products, equally subversive of bacterial hydrolysis, since they are the cause of the strong odours, which prevail in a septic tank effluent, and as they are detrimental to the subsequent oxidation in contact or other ærating beds, they should be removed, by exhaustion, from the tank as they are formed.

5. That as sludge must accumulate, means must be provided for its systematic withdrawal. Any attempt to establish a so-called equilibrium is futile; it is, in fact, a method of evading the issue and of throwing upon the subsequent treatment matters which ought to be dealt with effectually in the tank.

As a result of Dr. Travis' experiments, he produced and patented the hydrolytic tank. The first tank was constructed about 1905, at Hampton, a second tank being erected at Norwich, England. (See Fig. 3.)

At the summer meeting of the Association of Managers of Sewage Disposal Works, held at Leicester in 1908, Dr. Travis read a paper entitled, "The Hampton Doctrine in Relation to Sewage Purification." In this he claimed:—

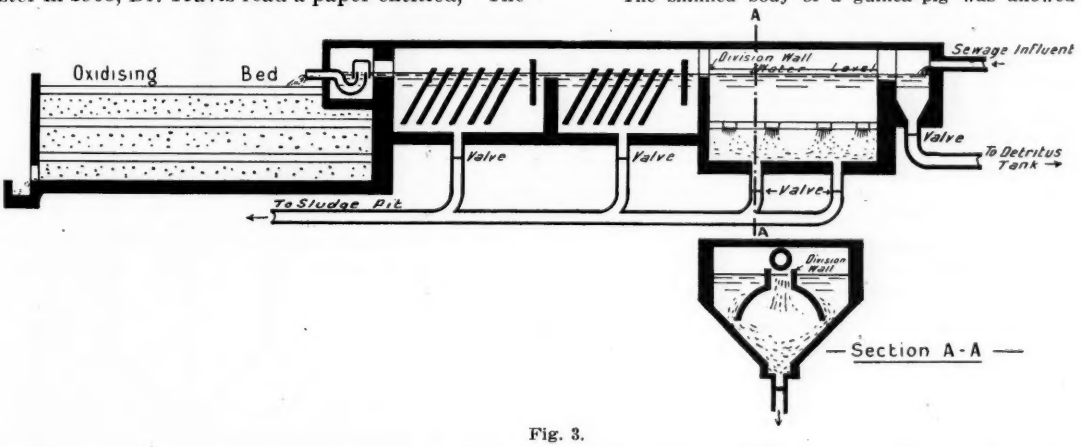


Fig. 3.

1. That the purification process was essentially a physical operation in which the suspended and soluble impurities in the sewage were removed from the liquid by a process analogous to precipitation.

2. That the works in themselves were essentially depôts for the reception and for the storage of the solid matters, which had been abstracted from the sewage.

3. The effluent was a comparatively pure liquid, which resulted from the fact that the crude sewage, by virtue of a physical operation, had deposited its sludge at the works.

"The doctrine thus denies that the purification process is in any sense of the word, or under any circumstances, the result of bacterial action." The micro-organisms are merely incidental, and their actions are but ancillary to the actual purification. The bacterial activity is, though not entirely, yet practically limited to the deposited and absorbed matters stored in the treatment areas from sewage already purified, and in their subsequent operation the bacteria are but one of the many groups of scavengers, which deal with dead organic matter.

Now in absolute contradistinction to Travis' statement that bacteria have no part in the purification of sewage, we have Professor Dunbar's experiments (Dunbar, pages 92-94).

Dunbar expressed himself as follows:—

> "I have investigated the solubility of organic substances by suspending in septic tanks a large number of solid organic substances, such as cooked vegetables, cabbages, turnips, potatoes, peas, beans, bread, various forms of cellulose, flesh in the form of the dead bodies of animals, skinned and unskinned, various kinds of fat, bones, cartilage, etc., and have shown that many of these substances are almost completely dissolved in from three to four weeks.
>
> "Of the skinned animals, the skeleton alone remained after a short time; with the unskinned animals the process lasted rather longer.
>
> "At this stage it should be pointed out that the experiments were so arranged that no portion of the substances could be washed away; their disappearance was therefore due to solution and volatilization.
>
> "The skinned body of a guinea-pig was allowed to remain in a septic tank for three weeks, when the clean, white bones alone remained.
>
> "Further experiments have been carried out by Favre at the Hamburg Institute, with proteins, albuminoids fats, carbohydrates, etc., and it was found that the protein substances and albuminoids are the most easily decomposed, whilst fats are the most resistant, decomposition only taking place on the surface into fatty acids and glycerol. Carbo-hydrates are readily decomposed in the septic tank; cellulose also appears to be decomposed, but cork remains unaltered."

In view of such observations, the opinion that the organic portion of the sediment in septic tanks is not decomposed, *i.e.*, resolved either into a liquid or gaseous state, becomes untenable.

In May, 1909, K. Imhoff, Engineer of the *Emscher-Genossenschaft*, in Essen, Germany, wrote a paper to "The Surveyor and Municipal and Country Engineer," describing a new method of treating sewage:

> "In urban sewage, about one-half of the organic matter is, in general, undissolved. This undissolved matter can be removed by mechanical means. The simplest method of mechanical purification consists in sedimentation, the suspended impurities being deposited, by gravity, as sludge. Sedimentation is dependent on time,

The longer the period of clarification the more sludge is deposited. The separation is, however, very unequal. In the first few minutes the rate of separation is highest; thereafter the rate gradually decreases. This is shown by the curve in Figure 4, which may be taken as representing the average for normal municipal sewage. It will be seen that after one and a half to two hours, 75% of the suspended matter has been separated. In the course of the following hours there is practically no increase in this percentage. The slight effect produced by extending the period of purification is by no means proportional to the increased cost of construction of the larger subsidence tanks required. In addition to this, protracted retention of the water in the

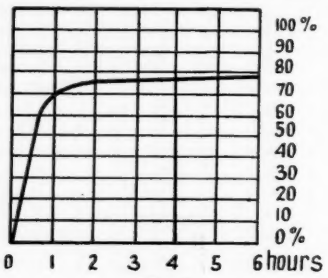


Fig. 4.

tanks involves risk of putrefaction. For this reason alone the period of sedimentation should not exceed two hours. . . . . It may be mentioned that the percentage of separation varies considerably in different sewages. In the case of dilute sewage, it is usually lower than in the case of concentrated sewage.

"Besides the length of the treatment, which is the main factor in sedimentation, a number of secondary factors have to be taken into consideration in the construction of subsidence works."

Treatment of the Sludge.

"The treatment of the sludge is as important as the purification of the sewage. Sewage works in which the question of the sludge treatment is not satisfactorily disposed of cannot in the long run fulfil their primary purposes, *i.e.*, that of purifying water. It is not sufficient to provide only for effective sedimentation of the sewage. It is equally essential to provide for efficient removal of the sludge, and for the further treatment thereof, even if provision for these matters involves some departure from the ideal process of sedimentation pure and simple. The plant must, in fact, be the result of a compromise between the requirements of sedimentation on the one hand and of sludge treatment on the other hand.

"The sludge pumped in a fresh state from the tank has very unfavourable qualities. It contains much water, and is consequently of large bulk. It dries with difficulty and passes while drying into a state of odoriferous putrefaction. Industrial utilization of the sludge (for example, for the production of fat) has not hitherto proved successful on a large scale. The best manner of dealing with the sludge is still by the treatment in septic tanks. The sludge is by this treatment reduced in bulk; the drying thereof is facilitated, and it is rendered odourless.

"If it is preferred to allow the sludge to decompose, it is advisable to combine all residues with the sludge, that is to say, to retain only the coarsest obstructions at the gates, and to dispense with a sand collector, provided that the sludge mixed with sand is capable of conveyance. It is important in this respect that the sand be mixed as uniformly as possible with the sludge at the time of sedimentation."

Tanks as Self-Acting Sewage Works.

"The sewage plant (Figure 5) used by the *Emscher-Genossenschaft* consists essentially of deep tanks, which receive the sludge. In the upper part of these tanks the subsidence tanks' chambers through which the water flows are divided off by partitions. The floors of the subsidence chambers are inclined, and the sludge slides down them, in order to pass through slots into the sludge tanks. Without supervision or attendance, the sludge is, therefore, continuously and promptly removed from the subsidence chamber. The sludge accumulates in the tanks, and the sludge tanks gradually develop into septic tanks. Only the sludge, however, is decomposed. The flowing water is kept free from putrefaction. If putrefaction has already occurred in the water, it is at least not furthered in the tank."

According to Saville, Assistant Engineer, Sewage Department, *Emscher-Genossenschaft*, Essen, Germany, it is found that sewage sludge, when once thoroughly rotted away, is unobjectionable in character, and is easily handled.

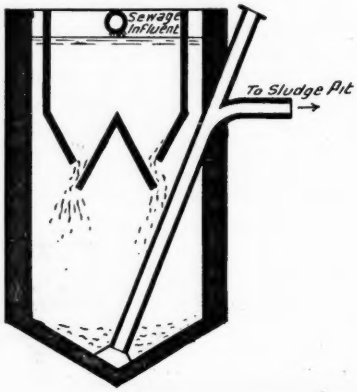


Fig. 5.

The problems presented to the Emscher Engineers were (1) to design a tank in which sewage might have a sufficient time for settling to effect the removal of all suspended matters, which could be economically separated from the water by sedimentation; (2) to provide a means of removing the deposited solids from the settling chambers automatically, so that the disturbing action of the gas formed during decomposition of the sludge could not cause part of the deposits to pass out with the effluent; (3) to ensure that the sewage in its passage through the tank should not come in contact with either the decomposing sludge or the gas, in order that it might remain unchanged in character as far as the organic matter in solution is concerned; and finally to make arrangements for allowing the sludge to become thoroughly septicized, as it is only after complete decomposition of the organic matter that it becomes unobjectionable and easily handled.

The period of sedimentation ranges from one to two hours, which is sufficient to separate from the sewage 75% or more of all suspended matters capable of removal by sedimentation.

The time allowed for thorough septicization of the sludge varies with the character of the sewage, being usually as much as three or four months. As the tanks are 25 feet deep or more, this process of rotting out the decomposable organic matter takes place under very favourable conditions. There is an absence of odour; the large quantities of gas rising from the sludge are found to be inodourous. Analyses have shown the presence of approximately 75%

marsh gas and 25% carbon monoxide, but practically no sulphuretted hydrogen.

The effluent from the sedimentation chamber is not only well clarified, but is free from odour.

The sludge, when removed from the tanks, contains only 75% to 80% water, but flows readily in concrete channels to the sludge-drying beds. In the drying beds it dries rapidly, becoming firm and "spadeable" in three or four days.

The sludge has absolutely no objectionable odour; its appearance is that of porous garden loam.

The sludge dries so rapidly that very small drying beds are required.

At Bochum, for example, where the sewage from a population of 145,000 is treated, the sludge-drying beds cover an area of only half-an-acre.

The water, which drains out of the sludge while on the drying beds, is clear and odourless. The effluent flowing off from the Emscher or Imhoff tanks, though containing practically no suspended matter, is still highly charged with soluble organic matter. At Emscher the effluent runs into a canal, where the dilution is sufficiently great to prevent nuisance. But under ordinary conditions the effluent must be further purified by bacterial treatment on ærobic filter beds. (See Figure 6.)

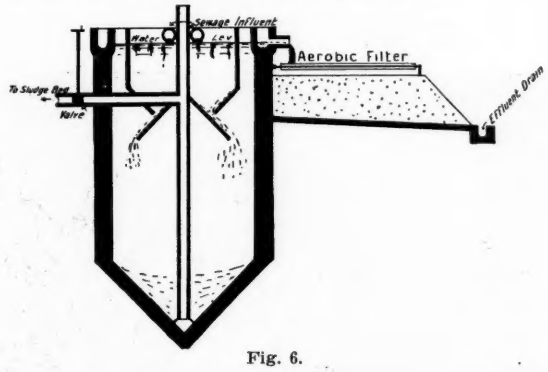


Fig. 6.

From the foregoing it will be seen that the effluent water, draining away from the filters, has, by the aid of the micro-organisms, been converted into a clean, inodourous liquid; but, as the processes depend upon the activities of the micro-organisms, it might be asked what has become of them in the passage of the sewage through the septic tank, etc.

Experiments conducted by the Royal Commission upon Sewage Disposal, to determine the average number of organisms present in sewage during the successive stages of treatment gave the following results:—

Crude sewage	4,000,000 per c.cm.
Tank effluent	400,000 per c.cm.
Filter effluent	45,000 per c.cm.

Although the number of bacteria in the effluent has been reduced by about 99%, it might yet be asked would there be any danger of pathogenic organisms, if any had been present in the sewage, surviving the treatment.

Some experimenters (McConkey and others) claim that pathogenic organisms do not survive the passage through the septic tank, whilst others state that disease organisms will survive in effluents, which have passed through land treatment. In view of the large number of installations, in which chloride of lime disinfection is used, it would appear safer to disinfect any effluent discharged into streams or places which might become infected. The use of high-grade disinfectants in the sewerage system, if excessive, greatly hinders the work of liquefaction in the septic tanks; in a properly designed system it is not necessary to use powerful disinfectants.

In the matter of sterilization of hospital and other dangerous effluents, a further improvement has been effected by the use of calcium hypochlorite (ordinary chloride of lime), which is fed into the channel collecting the effluent from the septic tank, so as to give a strength of 5 to 10 parts per 1,000,000 to the liquid discharged on the ærobic filter. Experiments carried out by Mr. Farquharson Boan and myself showed that the addition of the hypochlorite to the septic effluent did no injury to the ærobic filter, and by interposing a small tank on the outlet pipe drain large enough to hold up the effluent for about two hours, complete sterilization resulted. This has been proved repeatedly by other experimenters. The method was first suggested to me by Dr. Rideal's account of experimental work on the sewage of Maidenhead (Rideal, p. 64), and is now being practised on a large scale in America, Great Britain, and the Continent.

The results of a long series of tests (1906-1907) carried out at Guildford by Dr. Rideal, are summarized as follows (Royal Sewage Commission, 1908): (1) Treatment with hypochlorite solution containing available chlorine equal to 35% to 50% of the amount of oxygen consumed by permanganate in five minutes in the cold is sufficient to do away with the smell of hydrogen sulphide (H_2S), leaving only an inoffensive odour of spent bleach. (2) The addition of this quantity in no way interferes with the efficiency of the filter, but adds to it by helping to keep down an excess of gray growths on the top. (3) A much larger quantity may be added without any danger to the filter. (4) A dose of hypochlorite, more than sufficient to remove the hydrogen sulphide smell and kill *b. coli* in the liquid, may be used without prejudice to the purifying ability of a mature percolating filter.

Rideal draws these further conclusions: (1) That sewage from hospitals may be freed from dangerous organisms by the use of calcium hypochlorite before passing into beds or entering ordinary sewage systems, without interfering with the usual methods of purification; (2) that when beds are clogged with growths, these can be dissolved and washed through speedily by occasional doses of hypochlorite.

From a third series of similar experiments with a filter divided into compartments, one containing a fine and the other containing a coarse filter medium, these conclusions are drawn: (1) That a bed can be successfully matured when using hypochlorite in such quantities as are required for preventing offensive odours; (2) that this treatment renders possible the use of fine grade filters; (3) that it

renders easy the cleansing of pipes, sprinklers, and syphons, which may have become blocked, without disconnecting the system (Kinnicutt). It would thus appear that nitrifying organisms flourish uninjured by the hypochlorite, which has a marked germicidal effect on most other organisms.

Reviewing the foregoing, it will be seen that bacterial treatment of sewage by means of the so-called septic tank, given proper working conditions and the small amount of necessary attention, produces a clear, clean, odourless effluent, and creates a minimum of sludge. With the exception of this sludge problem, which is still one of some moment, the outstanding difficulties of the problem have been solved, whilst in the smaller questions which continually arise there is still room for investigation by the chemist, the biologist, and the engineer.

After extensive investigation of the various methods of sewage disposal, and my satisfactory experience with the bacterial (septic tank) method, I am unhesitatingly of opinion that the latter gives the best results, and that in it, as knowledge and experience accumulate, will be found the ultimate solution of all sewage disposal difficulties.

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Reports of Cases.

A CASE OF PRIMARY DIPHTHERIA OF THE TRACHEA.

By **F. Miller Johnson, M.D.,**
Melbourne.

Dr. Henry Laurie's interesting report of a case of plastic tracheitis and bronchitis in *The Medical Journal of Australia* of February 13, 1915, prompts me also to put on record the following case of primary fibrinous tracheitis, associated with the diphtheria organism. The patient was a thick-set, well-nourished young woman of good complexion, aged 19 years. Her personal and family history was good. She had menstruated last from November 14 to 18, 1911, and when seen on August 5, 1912, she looked the embodiment of health, and the only abnormality was a trace of albumin in the urine.

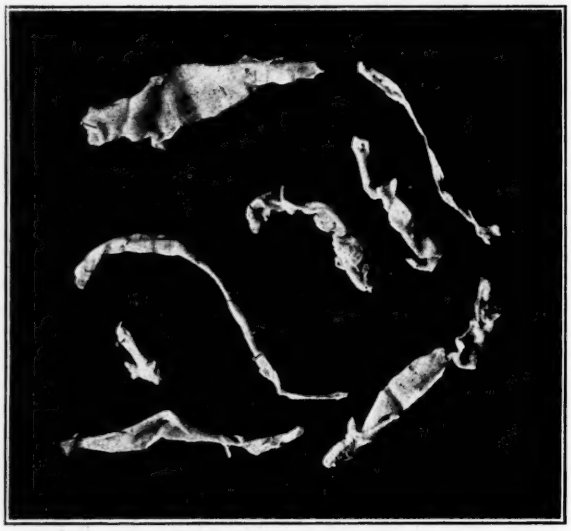
On August 20 I paid her a chance visit, and found her with a cough and a husky voice; the temperature was normal, pulse a little quick (108), respiration only 18, tongue clean, tonsils normal. There was not any dyspnœa, and nothing abnormal was heard on examining the thorax. On the 22nd the voice was more husky and thick, but she felt quite well. Later in the day labour pains set in, and at 9.30 p.m. she received an injection of morphine, gr. ⅙; hyoscine, gr. $^1/_{100}$; atropine, $^1/_{200}$; after which she got considerable ease till 2 a.m. on the 23rd. At 7 a.m. a note was made that the pulse was "quiet." Chloroform was given, and at 8.30 the head was lifted over the perinæum with forceps, without laceration. An injection of 1 c.cm. of infundibular extract of pituitary was given as a routine measure, and the placenta was expelled complete 22 minutes later. The voice continued husky, and there was some cough. In the evening the temperature rose to 101°, but the comparative rate of respiration was not increased at all, the pulse being 102, respiration 21, and it will be seen by reference to the chart that this remarkable condition continued throughout the illness.

On the 24th she expelled a long tracheal cast, and the nurse, an untrained woman, told me that she had before this thrown up several pieces of skin. Respiration was husky and croupy, and the voice almost inaudible, but she felt and looked well. There was not the slightest dyspnœa, and no râles nor any other adventitious sounds were to be heard, and the air entry was free and apparently normal. During the evening she almost choked while bringing up these casts, and at 12.30 a.m. on the 25th I saw her blue in the face, the eyes starting out of the head, and fighting for her breath, and she thought she would die; but directly she coughed up the cast she felt well. She was taking a mixture of quinine and apomorphine, and through the day she took food well and began to nurse the babe.

Some of the casts were sent to Dr. Bull, who later reported that he did not detect any Curschmann's spirals or Charcot-Leyden crystals. There were no eosinophile cells, nearly all the cells being polymorphonuclears. No tubercle bacilli were found; the principal organisms were streptococci. There were also one of two diphtheroid organisms. The same afternoon Dr. Hiller saw the patient with me, and was as surprised as I was myself to notice the little respiratory embarrassment. He took a sample of the blood, and also some of the expectoration, to make a vaccine. Next evening he rang me up in surprise, to tell me he had found a pure culture of the Klebs-Lœffler bacillus, and a little later I injected 4,000 units of anti-diphtheritic serum. I did not use a larger dose, as the patient was evidently dealing well with her infection.

During the 26th (that is, before the injection of the antitoxin), there was a great deal of cough, with profuse yellow expectoration. There were no râles or crepitations; air entered freely, the general condition was good, and the involution of the uterus excellent.

On the 27th she felt well, food was well taken, respiration was still croupy and husky, abundant tenacious, yellow, frothy expectoration was brought up, and another cast was expelled. There was not any dyspnœa, and only an occasional respiratory râle was to be heard, and that especially on the right side.



At the beginning of the illness, she preferred to lie flat on her back, without any pillow, but on the 28th she felt "just the thing," and sat up, propped with pillows, for a time. At 4.30 a.m. she had expelled another cast without any trouble. The voice was very husky, but there was not any difficulty in swallowing nor any dyspnœa, and there was still considerable expectoration. The general condition was excellent, and on this day she passed urine for the first time since the confinement without the use of the catheter.

On the 29th voice was still very low and husky, but the cough was much less through the night. During the day she brought up quantities of viscid, frothy, white expectoration, in which were some large, blood-stained masses, which floated in the more fluid part, and in the afternoon she expectorated a large piece of exudate. On awakening, she had complained of soreness of the throat, but the tonsils

presented a normal appearance. The patient's general condition was good; the heart sounds were normal, there was no evidence of dilatation, and there was little to be heard in the lungs. For these reasons, the future was regarded with confidence.

From August 30th to September 5th she slept well and took her food well. The voice continued low and husky. She brought up a great deal of expectoration, generally quite easily when it was grey in colour, but if she coughed severely it was often blood-stained. After the last date, it diminished very greatly in quantity. But on September 9th she complained of a violent headache; she began to cough a great deal and to expectorate muco-purulent masses. Later in the day she passed per anum large masses of mucus. On the 10th the expectoration was much more abundant, and she was bringing up casts of apparently smaller bronchial tubes. She still felt well, and only an occasional râle was to be heard.

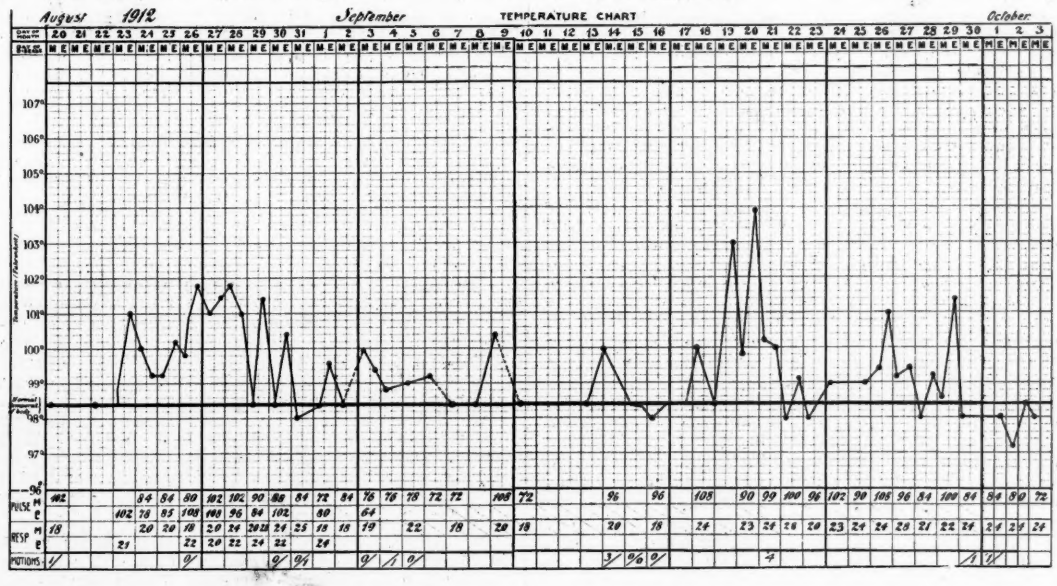
On September 12th, that is, 20 days after the confinement, there was a good deal of vaginal hæmorrhage, which ceased on the 15th, and the body was covered with an urticarial rash, which lasted for the next two days.

and less, and the amount of expectoration diminished also. The voice still remained husky. On the 17th I was able to get a good view of the larynx at my house. The mucous membrane was intensely congested, the cords were quite red, but moved freely, and there was not any ulceration. Five days later her voice was clear and distinct, but it still required some little effort to produce it. From this time on she made a rapid and complete recovery.

The patient was so obviously able to deal with the illness herself that, beyond careful rest in bed and attention to diet, the only drugs used were the single dose of antitoxin and some tonics.

The interest of the case lies in the fact that it seems to be a case of primary diphtheria of the trachea, for at no time were the tonsils invaded, and beyond the husky voice, there were no laryngeal symptoms. The bronchial tubes were certainly not affected in the earlier stages, and there were never any signs of consolidation.

As in a number of the reported cases, the general health was quite good, the patient did not suffer from dyspnœa, and, as a rule, the casts were expelled without any great effort or difficulty.



On the 15th her voice was so husky and like the bark of a dog that she had to laugh at it herself. On the 20th she spoke naturally from time to time, and the cough and amount of expectoration had diminished greatly. On this day the vaginal hæmorrhage began again, and continued for three days.

On the 22nd there was a violent, distressing cough, with an abundant expectoration of watery fluid, in which floated large masses. It varied in amount from two to four ounces per day. At this time the general condition was not quite so good, and she was troubled with pain in the right ear and neuralgia of the head, but beyond a few dilated blood-vessels along the handle of the malleus, nothing abnormal was noted. The teeth and tonsils were normal.

After the beginning of October the cough became less

In some part the mystery of the etiology of these cases of plastic tracheitis has been dispelled by bacteriological observations; but what is the state of the individual mucous membrane which permits the formation of casts remains at present an unanswered question. The theory of a high calcium content of the blood cannot apply in this case, where the patient was a young, healthy mother, with an overabundant secretion of milk, and therefore possessing an active thyroid, nor do the attack of urticaria and the two attacks of vaginal hæmorrhage lend support to it.

Attached is a photograph of some of the casts which my friend, Mr. Fryett, kindly took for me, and also a chart of the temperature and pulse and respiration rates, taken during the illness.

Reviews.

THE EXTRA PHARMACOPŒIA.

A perusal of the sixteenth edition of Martindale and Westcott's "Extra Pharmacopœia"[3] serves to remind us of Goldsmith's village schoolmaster—

"And still he talked and still the wonder grew
That one small head could carry all he knew."

It is surprising how much valuable and up-to-date information on all matters bearing on modern materia medica has been compressed into the two volumes. These latter may be purchased separately, and practitioners, who may not feel disposed to obtain both, are strongly recommended at least to acquire the first volume. This contains all matters dealing with the chemical and therapeutic properties

[3] The Extra Pharmacopœia, by W. Harrison Martindale, Ph.D., F.C.S., and W. Wynn Westcott, M.B., D.P.H.; Sixteenth Edition, in two volumes, 1915. London: H. K. Lewis, 136 Gower Street, W.C.; Fcap. 8vo., Vol. I., pp. 1113. Price, 14s. Vol. II., pp. 469. Price, 7s.

of such chemicals and drugs outside the Pharmacopœia that have been deemed worthy of attention by the medical world. The chapters on vaccines and organotherapy have been re-written, and much valuable information added, and the list of references is amply sufficient for those desiring further information. The more important changes in the British Pharmacopœia are briefly described, and alterations in strengths and doseage tabulated. But it is mainly with the chemicals and drugs that are more or less on their trial that the book under review deals, and amongst the most important of these are carbon dioxide, lactic acid, anæsthetics, both local and general, organic arsenic and antimony compounds, colloidal metals, paraffin, radium, scarlet "Red" tuberculin and gland extracts. The article on arsenic and its organic compounds is a comprehensive and valuable contribution to medical literature, and the references therein constitute a very useful guide. Much work has recently been carried out on the salicylates and aceto-salicylates, especially by Stockman, and a full account has been given of it. Stovaine and its use in surgery receives due notice. Urea derivatives are enlarged upon for the purpose of defining "ureides," because of the recent British Order in Council to place in Part II. of the Poison Schedule "all poisonous ureides." This is on account of the numerous cases of veronal poisoning which have occurred lately. As vaccines and antitoxins are quite ignored by the Pharmacopœia, we are pleased to find them so fully dealt with by the authors. The chapters on these is perhaps the most comprehensive and illuminating in the whole book. Ehrlich's and Wright's theories receive short resumés. The preparation and standardization of vaccines are given due notice, as is to be expected in a work such as this, and good accounts are included of the individual vaccines in general use. This is opportune, in view of the important part immunization is playing in the present great war. Tuberculin and its administration and the dispensary treatment are dealt with fully. In the section on organotherapy the most useful portions will be found to be those on the pituitary and thyroid glands. The supplementary list of drugs has not altered greatly, but will come in handy for reference. Some of the drugs mentioned might well have been omitted.

Part II. contains analytical addenda to the materia medica of Part I., the most important being those on digitalis, opium, strophanthus, and the coal-tar derivatives. Abderhalden's serum reaction and the numerous modifications of Romanowski's blood stain are described, as well as the technique of examinations of the cerebro-spinal fluid. Saline fever has been ascribed to the use of toxic distilled water in the preparation of the saline; the authors attempt to controvert this, but they have obviously misunderstood some of the work done in this direction. The stand being made in recent years against quackery, and especially that of the patent medicine vendor, has been assisted by the publication of the analyses of these preparations. In many instances these preparations are almost wholly without constituents of physiological value. The publication of "Secret Remedies" has given us useful information on this head, as also the evidence taken by the Select Committee on Patent and Proprietary Medicines. This has been of great assistance to the authors in the compilation of the section on the subject of proprietary medicines. This part contains, in addition, a simplified account of the bacteriological examination of drinking water and bacteriological and clinical notes with reference to special diseases. On the whole, the present edition of this useful handbook may be said to enhance the well-deserved reputation of its predecessors.

Medico-Legal.

REX *v.* GRAHAM; REX *v.* HODGSON.

The Court of Criminal Appeal constituted by an Act of the Victorian Parliament in 1914 sat for the first time on May 6, 1915, for the purpose of considering the appeal against the judgement entered in the cases of Rex *v.* Kathleen Graham and Rex *v.* Thomas Hodgson. The woman's case was dealt with first. On May 6, counsel argued that a full Court of Appeal consisting of five Judges should sit for the purpose of hearing the case. The contention put forward by counsel for the accused woman was that it was unfair on her that the appeal should be determined by three Judges, of whom two were those who had presided at the trials at the Criminal Court. After much argument, the Chief Justice held that the Court was properly constituted, and that the case must go on. The grounds for appeal were (1) that evidence had been admitted improperly. The evidence objected to was that of Frances McLellan, the evidence of the accused under cross-examination, and that of Rose Forbes, in so far as it related to conversations with the accused about McLellan and another woman. (2) Misdirection and non-direction of the judge in not directing that the witnesses Forbes, McLellan and Carey were accomplices, and in refusing to direct that the jury should not act upon the uncorroborated evidence of an accomplice, and in directing that the jury should consider the case unhampered by a rule as to the need of corroboration. It was further contended that the direction of the judge had failed in regard to the burden of proof and significance of the evidence submitted. The arguments were continued on May 7 and 10, at the end of which the Chief Justice stated that the Court would consider its decision in view of another case to be heard. On May 12 and 13, further points were submitted to the Court in support of the appeal.

On May 10, 1915, Thomas Hodgson appealed against the conviction on the grounds that there was no evidence to be submitted to the jury, and that there had been mis-direction and non-direction on important points.

Mr. McArthur, who appeared for Dr. Hodgson, claimed that the operation performed by the accused on the girl Rose Forbes was a proper operation to perform under the circumstances. The accused was not present at the time when Graham used an instrument for a certain purpose on the girl, but the Crown suggested that Graham and Hodgson were acting in concert. To this counsel objected, in view of the fact that there was no evidence in its support. Mr. Woinarski, for the Crown, submitted that the facts were inconsistent with the innocence of the accused. Witness Carey had stated in evidence that Hodgson had offered to perform a certain act for the sum of 35 guineas. Hodgson had received six guineas from each of the girls, Forbes and McLellan, and had not even enquired their names. He did not even ask about the history of the condition. It looked as if there was an agreement with Graham.

Mr. Justice a'Beckett said that he had had some doubt whether the evidence was sufficient to send the case to the jury, but that he had arrived at the conclusion on the general aspects of the case. He would not act in dissention from the views of the other members of the court.

The Chief Justice held that medical practitioners were at times called upon to perform an operation like the one performed by the accused in the course of their legitimate practice. In order that a man could be found guilty, it would be necessary to prove that the operation was not necessary for the health of the patient, or that it was the necessary consequence of a previous illegal act. There was no direct evidence that the operation performed by Hodgson was not done in the ordinary course of his medical practice. If it could be shown that there was a mutual understanding between the woman Graham and accused, he might be held guilty. The rule was that if a chain of circumstances were established pointing to guilt, and if this chain of circumstances were accompanied by one circumstance which was inconsistent with the innocence of the accused, the jury might convict on the strength of circumstantial evidence alone. In the present case, the Chief Justice stated, there was no stronger evidence to show that the accused was engaged in a unlawful occupation than in a lawful one. None of the circumstances were inconsistent with innocence. In these circumstances, he held that the conviction must be quashed.

Mr. Justice Hood concurred.

The appeal was therefore sustained and the conviction quashed.

The Medical Journal of Australia.

SATURDAY, MAY 22, 1915.

Noise Deafness.

A Committee has been appointed by the Admiralty for the purpose of investigating the nature of gun-deafness and the best means of its prevention. This enquiry may or may not determine the nature of deafness caused by sudden and penetrating noises, but in view of the experience of the soldiers on the field of battle, the gunners on board ships, and military surgeons and nurses on duty in the neighbourhood of artillery, the endeavour to introduce an efficacious prophylactic is laudatory. The subject has been before the professional mind for some years. It is true that it has been recognized for a very long time that sudden, great noises cause deafness, but no serious investigation has been undertaken until a comparatively short time ago. In an admirable article, published in the *Journal of Laryngology, Rhinology and Otology* of March, 1915, Dr. T. Ritchie Rodger has analysed the experimental work on the subject of noise deafness, and recorded the results of clinical observations, more especially in the instance of boilermakers. It appears that Wittmaack, of Jena, failed to induce changes in the organ of hearing in guinea pigs, who were exposed to the continuous sound of an electric bell. When the sound was conducted by vibrations through the bone the animals wasted rapidly, and died within sixteen days. The changes found in the ganglion cells of the spiral lamina consisted in the disappearance of Nisal's granules, the formation of vaculles, and the presence of bodies like "asthma crystals." The nerve fibres in the spiral lamina were markedly affected, while Corti's organ was the seat of extensive atrophic changes. Wittmaack failed to discover any changes in the cochlea after the animal had been exposed to sounds conveyed by air-conduction Yoshi, however, showed by more minute examination that air-conducted sounds actually did induce cochlear changes. The lastnamed observer was able to show that Helmboltz's theory was essentially correct, inasmuch as the atrophy produced by a whistle giving a high note was limited to the upper half of the basal coil of the cochlea, while that produced by a whistle giving a medium or low note effected changes in the middle or upper part of the second coil, or in a still higher portion of the cochlea.

Dr. Ritchie Rodger has noted some very striking facts in connexion with noise deafness. In the first place, the loss of hearing for high notes is comparatively small, the greater part of the deafness being for the range of sounds embraced by the sounds producing the deafness. The loss of perception of notes of a higher pitch takes place as a secondary change, and occurs at a later date. He also showed that the vestibular apparatus is affected by loud and continuous noises, but to a less degree than the cochlea apparatus. Other facts of physiological importance were brought to light. From all these data he concluded that air-conduction was a large factor in the causation of noise deafness, and consequently meatal plugging could obviate the development of the changes which were manifested by deafness.

In an editorial note in the same Journal, attention is drawn to the exhausting effect of an incessant series of excessive auditory stimuli. A comparison is drawn between the wasting influence of these stimuli on the reserve store of nerve-energy and the neurasthenia producing effect of severe, persistent pain.

The deduction from these investigations and utterances is that men engaged in any capacity in the present war should be compelled to use suitable meatal plugs. Wittmaack advocated a rubber mat to avoid bone conduction of vibrations, but since Hoessli and Yoshi have shown that air-conduction is directly responsible, this suggestion need not be entertained. Meatal plugs of rubber, celluloid or cotton-wool either smeared with vaseline or made up with jeweller's wax can be recommended. Plain cotton-wool is obviously insufficient. Plasticine moulded around cotton wool makes an excellent plug. Some difficulty may be experienced in inducing men to wear these plugs, but with the increasing discipline of our troops under the hard task-master of brutal warfare, no doubt the opposition can be overcome.

THE MELBOURNE CORONER.

Last week we called attention to the first part of an inquest on the body of a young man who died

of the effects of an accident in the streets of Melbourne. The Coroner, Dr. Cole, after passing some remarks which were unmistakably strictures on the medical and nursing staff of the Melbourne Hospital, ordered an adjournment for the purpose of obtaining the evidence of these witnesses. On May 13, 1915, further evidence was taken, including that of the father and sister of the deceased, and of Drs. Tymms, Alan Newton, R. P. McMeekin, and Ellen M. Balaam, and of the ward Sister and a nurse From this evidence it appears that the sister of the deceased was greatly prejudiced against the Melbourne Hospital and, not understanding the effect of shock following a severe accident, was intolerant of the delay in operation. She had a conversation with the nurse, in the course of which she said that her brother was not receiving proper attention. She maintained that in reply to her question why the operation had not been done before, the nurse had replied that the theatre was in use. The nurse denied this, and from the medical evidence there was no doubt whatever that the operation would have been unjustifiably risky had it been performed during the time when shock was marked. The nurse was induced to say to the sister, in reply to the retort that her brother was being treated like a dog, that if they were not satisfied they should take him elsewhere.

The medical evidence was given in a clear and direct manner. The patient was suffering severely from shock on admission, and had lost a great deal of blood. The administration of a general anæsthetic would have further endangered his life. An injection of morphine was given, and the hæmorrhage arrested by tourniquet. The shock due to trauma involving the large vessels and nerve trunks was sufficient in itself to prove fatal. There was no truth in the suggestion that an operating theatre not being available had caused delay in operating. Dr. Alan Newton pointed out that urgent operations could be performed in the ward. The treatment was carried out from the first with due consideration of the patient's condition.

An incident occurred during the inquest which is suggestive. It seems that a constable had gone to the hospital, and had attempted to get members of the staff to make a statement on the case. They had refused to do this, acting on advice. The Coroner is reported to have remarked that the hospital had assumed an attitude which he did not understand, and he suggested that this was due to the members being afraid of criticism. He added that they were not prepared to disclose the facts. He had to enquire into the question whether any delay was responsible for the death of the man, because if that were the case, the question of manslaughter would arise.

In his summing up, Dr. Cole accepted the evidence given by the father and sister of the patient in preference to that given by the Sister in charge of the ward. His reason for coming to this conclusion was that both father and sister of the man would be less likely to forget the event than a Sister, who was accustomed to incidents of this kind. He acquitted the hospital of any negligent treatment that may have contributed to the man's death. There was a wide-spread impression abroad that patients were ill-treated at the Melbourne Hospital. It might be entirely wrong, or it might be contributed to by the attitude of the members of the staff. He spoke of the doctors and nurses as employees of the public. He regarded criticism as a good thing for the hospital and "its employees." A verdict of accidental death was entered.

There are one or two points which are worthy of criticism. Criticism is a good thing for Coroners. The members of the staff of the Melbourne Hospital are wise enough to know that any statement made by them outside the witness-box would not pass as evidence at the inquest. It is recognized by the British Medical Association that no medical practitioner is under any obligation to give gratuitous information to a Coroner or his representative. The Coroner's statements are calculated to bias the public against a most excellent institution. The members of the staff are persons who give the most valuable services, either gratuitously or in return of remuneration which a bricklayer would scorn. The work is done in a self-sacrificing manner, and should not be subjected to irresponsible criticism.

In regard to Dr. Cole's remarks about manslaughter, the mere statement by the father and sister of the deceased, who were admittedly prejudiced against the institution, would certainly require some corroboration before any Judge would give it serious consideration. All the other evidence showed that there was the

greatest care and skill shown, and that had the life of the deceased been savable it would have been saved. It was, perhaps, unwise for the nurse to have remarked that, if the relatives were dissatisfied, they might take the patient elsewhere. But when doctors and nurses are straining every nerve to save a patient's life, and are giving their whole energy and skill, taunts about ill-treatment by distracted relatives are irritating. In the choice between the version given by the relatives and that given by the Sister in charge, the Coroner should have had experience enough to know that the trained, skilled nurse is far more likely to realize what is transpiring than the relatives who are anxious and helpless, and who have to wait events as best they can.

Melbourne is happy in the possession of an excellent hospital, and it is questionable whether a Coroner cannot be held responsible for irrelevant remarks of a malicious nature passed in the course of an inquest.

THE ROYAL COMMISSION ON HOBART GENERAL HOSPITAL.

The Commissioners appointed on February 18, 1915, to enquire into the management of the Hobart General Hospital issued their report on May 11, 1915. Through the courtesy of the Commissioners, we have received a copy of this report, together with the correspondence which passed between the Commissioners and the Board of Management of the Hospital.

The main points of the report deal with the management of the hospital, the staffing, the provision of safeguards in the case of fire, and the relations of the Board to the Government. A full analysis of the report will be published in a subsequent issue. For the present, it is sufficient to call attention to the fact that the Commissioners have adopted a tone which is very different from that of the report of the first Royal Commission. In one place only do the Commissioners express an opinion on the type of reform suggested by Dr. McClintock for Tasmanian Hospitals. The Commissioners found that private practitioners were not generally consulted in cases which had been sent by them to the hospital. They considered this practice detrimental to the best interests of the patients. From the summary of the evidence given, it appears as if the defects in the hospital, in its organization and in its management could be remedied without altering the constitution of the institution. The record does not contain any justification for the sweeping condemnation of the Hobart General Hospital contained in the Royal Commissioner's first report.

IMPERSONATION OF A DOCTOR.

On April 10, 1915, we called attention to a prosecution of a person describing himself as Arthur Alfred Henry Bennett, aged 54, on the charge of perjury. It will be remembered that Bennett (alias McPhee) posed as a surgeon, and gave evidence in the libel action of Stevens v. British Medical Association. In his evidence he stated that he passed the examinations for the degrees of M.B., C.M., Aberdeen, in 1891, and that he had practised as a ship surgeon and in Liberia. The only Aberdeen graduate of the name of A. H. Bennett on the register is Dr. Bennett, of Adelaide, who took his degrees in 1891. In other respects the case is unimportant, save as an illustration of the impudence of an unscrupulous rogue. It is stated that, prior to his arrest, this individual visited Adelaide. It is satisfactory to note that he has been sentenced to six months imprisonment with hard labour.

A MILK-BORNE EPIDEMIC OF ENTERIC FEVER.

According to an account published in the *West Australian* the Medical Officer of Health of Claremont, Dr. Atkinson, had reported to the Commissioner of Public Health the results of his investigations into the causes of the outbreak of enteric fever. He had found that the disease was largely milk-borne, and that it could be traced to a certain dairy where there was a person who was a typhoid carrier. He had not been able to ascertain in what manner the milk had become infected. The possibility of contamination by flies had to be taken into account.

A HEALTH CONFERENCE.

A deputation from the Health Society of New South Wales waited on the Minister for Public Health of New South Wales on May 13, 1915. The President, Mr. Fitzgerald, explained to Mr. Black that it was proposed to organize a health conference in Sydney, to last for one week, on the lines of Health Week in England. He proposed to seek the collaboration of a number of societies interested in the health of the populace. He asked the Minister to extend his patronage to the conference by becoming its president, and by delivering an opening address. Mr. Fitzgerald gave some indications of the plan which will be followed. Subsequent speakers described the organization of Health Week, and of the Biennial Health Conference and Exhibition, the first of which was held in 1912 in London. The suggestions thrown out by Mr. Fitzgerald appeared to correspond more closely to this biennial conference than to Health Week.

Mr. Black, in his reply, exhibited deep interest in the movement, and agreed to lend his assistance in the manner proposed. In regard to the question of finance he did not think that any difficulty would be raised by the Treasury in regard to a contribution of £50 which had been asked for.

An epidemic of enteric fever of some magnitude is exercising the ingenuity of the Health Authorities of Epsom and One Tree Hill, Auckland. In the course of about six weeks no less than 47 cases of enteric fever have been notified from the city and suburban districts of Auckland. Of these, 44 were reported from the Epsom and One Tree Hill municipal districts. In view of the probability of a contamination of the water supply, the Department of Public Health has taken steps to trace the source, and to render the water supplied to the affected districts safe. In the meantime, the inhabitants have been warned of the necessity of boiling all water used for drinking, cooking, washing and other domestic purposes, and, further, of boiling milk, which may be infected from the water. Precautionary measures are suggested in regard to contamination of food by flies.

Pulmonary tuberculosis has been made a notifiable disease in Western Australia. The Health Department has issued regulations dated May 4, 1915, dealing with the notification, inspection and supervision of patients suffering from consumption. It is the intention of the department to exclude tuberculosis from the schools.

Abstracts from Current Medical Literature.

OPHTHALMOLOGY.

(161) The Diagnostic and Psychiatric Value of Wilbrand's Test.

With a new apparatus, Walker has endeavoured to examine Wilbrand's hemianoptic prism phenomenon (*Archives of Ophthalmology*, March, 1915). Wilbrand's paper appeared in 1899, and his observations have been examined by Hess, Behr and Jess. With one eye covered, the hemianoptic patient was told to fix a white point on a black wall. A strong prism was then suddenly placed before the eye, throwing the image on the blind retina. If the eye instantly moved so as to fix the point again, Wilbrand argued the lesion was central, otherwise it was peripheral to the basal stem ganglion. It appeared to the author that the phenomenon could be more accurately examined, without the aid of prisms, by means of an arrangement whereby a light could be flashed suddenly in any part of the field. He therefore constructed an instrument, shaped like an umbrella of one metre radius, at the back of which was a series of electric bulbs in three rows, one horizontal and the other two meeting the first one at an angle of 45°. Each row, beside the central light, contained six lamps at points corresponding to an angle of 15°, 30° and 45° from the centre. By means of a switchboard, any one of these lamps could be turned on and off at will. The patient is seated at a distance of one metre from the centre of the apparatus, and as the lights are switched on, the movements of the eye are noted. When the reaction is over one second it should be timed by a stop-watch; if less, a system of counting was found most satisfactory. Record was kept, especially of the reaction time on the blind side, as that on the seeing side was very constant and short. The reaction time was found to decrease after the first few trials, and depended in part on the intelligence of the patient. In all, 26 cases were examined for the Wilbrand reaction. In the group of anterior lesions were (1) those with bitemporal hemianopsia, (2) those with loss of vision in one eye and temporal hemianopsia in the other, (3) homonymous hemianopsia of track origin. In the posterior group were cases of homonymous hemianopsia and cases with loss of vision in one eye and nasal hemianopsia in the other eye. The author concluded from the examination of his cases that the results obtained by the Wilbrand test are surely a measure of certain processes of observation, memory and thought; that they are not an indication of the integrity of a definite reflex arc; and that many factors invalidate the test as a topical diagnostic reflex.

(162) Extractions of Cataract in the Capsule After Subluxation with the Capsule Forceps.

Failing to dislocate the lens by external manipulation without an unwise amount of pressure, Arnold Knapp (*Archives of Ophthalmology*, January, 1915) began to use Kalt's capsule forceps, the extremities of which are flattened, cup-shaped, and without teeth. He found that, in many cases, the grip obtained was so firm that, after some manipulation, the cataract became subluxated and could subsequently be extracted in its capsule with very slight external pressure. When the capsule tore, the operation was finished in the usual way. The Koster speculum was used throughout the operation, and an assistant was necessary only in the presence of complications. The section should be nearly half the corneal circumference. After the iridectomy, the capsule forceps are introduced to a point below the centre of the pupil, the branches allowed to separate broadly and a distinct knuckle of capsule grasped. The forceps, not grasped too tightly, should be moved from side to side, up and down, and rotated. When the dislocation has succeeded, a part of the margin of the cataract appears free in the pupillary space, generally below. External pressure then causes the cataract to turn a somersault or "tumble," and is delivered "feet first." It may come "head first" when counter pressure is applied to the scleral margin. The iris should be carefully replaced. The dressing is not changed for 4 days. The dislocation with the capsule forceps succeeds in from 40% to 50%. The results were satisfactory.

(163) Traumatic Pulsating Exophthalmos.

Bedell's patient (*Archives of Ophthalmology*, March, 1915) was a man of 37, who was thrown out of a street car and struck his head. Five days later, there was pulsation and a bruit at the upper part of the left orbit. He was seen by the author a year later, when the right eye was proptosed 30 mm., the veins of the lids prominent, but no pulsation at the eyeball. The left eye was proptosed 40 mm., and contained a mass of tortuous vessels in the upper lid, visible pulsation of the globe, abducens paralysis and a systolic blowing murmur over the supraorbital ridge, stopped by carotid pressure. The condition had become worse, but the patient refused operation. In 1907, de Schweinitz and Holloway published a monograph on spontaneous and traumatic exophthalmos, dealing with 54 cases of the latter. The author gives a resumé of 32 cases reported since. In this series the common carotid was ligatured 14 times, resulting in cure in 4, improvement in 6, and failure in 4. The internal carotid was ligatured in 6 cases, curing in 2, and improving in 4. Injections of gelatine resulted in cure in 1, in improvement in 1, and in failure in 1. Ligature of the superior ophthalmic vein should be done if ligature of one common carotid has failed.

(164) Purulent Meningitis Due to Ocular Trauma.

Veasey (*Archives of Ophthalmology*, January, 1915) reports the case of a man of 66, who, while fishing, had his left cornea penetrated by a fish-hook. He had to walk two miles, row four, and drive in a motor-car 20 miles before the hook was removed, seven hours later. He was then advised to have the eye removed, but declined. Next day he was seen by the author, when the iris appeared to be covered by a thin layer of pus. Enucleation was again recommended, but the patient would not consent till the evening of the following day. A thin, grey line was found, extending from the lens, through the vitreous, to the optic nerve, when the eyeball was opened after enucleation. The next day, the patient felt well, but toward night he suffered from severe headache, and the temperature rose to 104.6°. Ten days later he died. Lumbar puncture gave a fluid from which a pure culture of pneumococci was obtained. Commenting on the case, the author remarks that formerly it would have been reported as one of meningitis following enucleation. He argues, however, that it is by no means proved that the meningitis was due to the enucleation, but in all probability preceded the operation, though the symptoms were not then manifest.

(165) The Ocular Manifestations of Infantile Scurvy.

According to Sydney Stephenson (*Ophthalmoscope*, March, 1915), the commonest ocular signs in infantile scurvy are protrusion of the eyeball and hæmorrhage beneath the skin of the eyelids. In one record they were found in 10% of the cases, generally together, but sometimes separately. The protrusion and hæmorrhage may be slight or marked in extent, and are due to the same cause, namely, effusion of blood beneath the orbital periosteum. The signs may occur suddenly after a fit of crying. Other conditions sometimes seen are subconjunctival and retinal hæmorrhages and blood in the anterior chamber. The author describes a case of a child, aged five months, in which the ocular sign (hæmatoma of the lower lid) preceded any other sign of scorbutus. Blood in the stools and urine, and the improvement under treatment assisted in the diagnosis.

(166) Ocular Muscles in Exophthalmic Goître.

Willard's first patient was a man of 50 (*Ophthalmology*, January, 1915), who had marked exophthalmos. He had convergent squint (seen by the author 17 years before) and marked vertical displacement of both eyes. The right superior rectus and the left inferior rectus were paralysed; the right external rectus was paretic. After removal of the thyroid, the paralysed muscles improved markedly. The second patient, a woman of 40, suffered from exophthalmos and a deviation of the right eye downwards. On attempting to converge, the eyes would not pass beyond the median line (Moebius's symptom). There was paralysis of the right superior rectus and pareses of the right external rectus, and diplopia. After operative treatment, the ocular muscles improved,

LARYNGOLOGY AND OTOLOGY.

(167) Laterul Sinus Infective Processes.

Hugh E. Jones (*Journ. Laryng. Rhinol. and Otology*, March, 1915) has attempted to establish the proper method of procedure in cases of septic invasion of the lateral sinus. Before drawing any conclusions, he sums up the paths of infection met with, and the cases which the otologist may be called upon to deal with. In the latter group, he cites cases in which metastatic abscesses occurred near the shoulder in a simple streptococcal otitis media, without bone disease or sinus thrombosis, and in which temporal bone pyæmia did not lead to sinus thrombosis, although in each case, the symptoms were similar to those of sinus thrombosis. The usual method of infection is from caries of the wall of the sulcus lateralis or of the jugular bulb. Less frequently there is a primary septic thrombosis of the petrosal sinus or a persistent petro-squamosal sinus, and this may give rise to early pyæmic symptoms, without any actual lateral sinus thrombosis. A perisinus abscess may exist for some time in the common forms, without destroying the wall of the sinus, and the pus may even find its way through a fistula in the posterior wall of the mastoid. When the sinus wall is perforated and a clot forms, the process may be arrested at the jugular foramen and at the entrance of the superior petrosal sinus. He continues by tracing the infective processes through the torcular Herophili to the other great sinuses. He emphasizes the point that when the sigmoid sinus is firmly clotted, extension downwards is less likely to occur than extension backwards. After having dealt with these and similar points, he turns to the application of the observations to practice. It is necessary to form a complete diagnosis, either before or during the operation. It is not always possible to avoid a second operation, but this should be aimed at. It is necessary in nearly all cases to expose the sinus after the mastoid operation has been completed. The only exception to this rule is when the disease has existed for some days, when lung metastases are present and rigors are frequent. In these cases, rapid exposure, ligation and opening of the vein may save valuable time. When perisinus abscess with granulations covering the sigmoid sinus is found, the bone should be removed in both directions, without interfering with the sinus. At least a half-inch of healthy wall should be exposed at each end. He is convinced that from the external appearance of the sinus, it is possible to determine the condition of the intima and of the contained blood. Healthy granulations and the presence of pus, in the absence of repeated rigors, vomiting and oscillating temperature indicate a sound intima and fluid blood. When the sinus has lost its bluish-white, semi-translucent appearance, and there are no granulations, infection of the intima has probably taken place, and a solid or mural thrombus is contained. Incision of the sinus is carried out as a step in the operation, and not as an exploratory measure. The exposure of the sinus until healthy-looking walls are met with may involve following it to or beyond the torcular Herophili, and down to within reach of the jugular foramen. If no disease except an extradural abscess and so-called healthy granulations is apparent, he advises the surgeon to wait. If pyæmia is established but not severe, and there is a limited clot in the sinus, he incises the outer wall between compresses and packs the sinus with gauze. If the sinus is obviously diseased, but the contents partly fluid, he exposes the internal jugular vein in the neck. The same is done when the lower limit of the clot cannot be reached. This having been done, the vein can be compressed and the clot removed from the sinus as far down as the foramen, if the blood is flowing freely through the vein. If there is free flow of blood into the sinus, he advises plugging of the sinus and possibly applying Voss's provisional ligatures. If the vein is collapsed above the facial, but healthy below, it should be tied in two places and divided above the facial. The clot should then be removed by gentle irrigation. When the clot extends beyond the facial junction, he thinks it advisable to tie and divide the internal jugular vein as low down as possible.

(168) Tuberculoma of the Nasal Septum.

C. W. M. Hope (*Proc. Roy. Soc. Med.* (Laryngol. Section), January, 1915) records a case of tuberculoma of the nasal septum in a man aged 24 years. There was a history of 2½ years nasal obstruction on the right side, with very slight bleeding, and soreness of the anterior nares. A pedunculated cauliflower-like growth was found from the septum to the right anterior nares. A small patch of lupus scarring was present in the post-nasal space. Microscopical examination revealed that the tumour was a tuberculoma. At the operation, the whole of the right septal mucosa for about two inches from the vestibule almost up to the roof was found to be affected. The anterior two-thirds of the superior turbinal was also involved.

(169) Aspergillosis of the Nasal Accessory Sinuses.

Herbert Tilley has recorded five cases of aspergillosis of the nasal accessory sinuses, and W. D. Harmer has observed a sixth. The former publishes some details of his cases, together with a note by S. G. Shattock on the histological features of the material derived from them (*Journ. Laryng. Rhinol. and Otology*, April, 1915). The condition is not described in works on rhinology, but Tilley suggests that cases may occur and their true nature not be recognized. In regard to the ætiology, he finds that all six cases affected females. It has been definitely proved that the condition is associated with the growth of the *Aspergillus mycelium*. The symptoms consisted of marked nasal obstruction, associated with sneezing, discharge of a mucoid or slightly mucopurulent fluid, the occasional expulsion of small masses of a whitish-grey, semi-translucent, viscous material, and lastly neuralgic pains in the cheek and face. The discharge was not so free as to suggest a chronic empyæma. A marked sign consists in the incapability of cocaine to overcome the pale, swollen and œdematous condition of the nasal mucosa. These signs should lead the rhinologist to suspect aspergillosis, and if mycelia are found the diagnosis will be placed beyond doubt. In regard to treatment, all his cases were operated upon by the Caldwell-Luc method and as far as he was aware, no recurrence had taken place. In describing the histological appearances, S. G. Shattock records that he examined some oval masses of firm consistence, homogeneous and somewhat translucent. These masses were hardened with formol and cut by means of the freezing microtome. The sections were stained by various methods. Two elements were recognized, *viz.*, a mucinous basis and cells variously disposed in it, without fibre or vessels. In some areas spheroidal cells were found in numbers, in others the cells were sparsely distributed. Cell necrosis was seen in many situations. A close study of the cells led him to the view that they were polymorphonuclear leucocytes, which had become flattened, elongated and distorted by pressure. In addition to these elements, coarse crystals in conspicuous numbers were seen in the mucin. He discusses the possible significance of these crystals. In certain areas, a well developed mycelium was found in the mucin. Its coarseness excluded any form of actinomyces. The mycelium could be distinguished from *Blastomyces albicans* (thrush), and also from sporothrix. He has identified it as *Aspergillus mycelium*. The tumour is described by him as endothelioma myxœmatodes.

(170) Intrinsic Epithelioma of the Larynx One Month After Laryngo-Fissure.

St. Clair Thomson described a case of intrinsic epithelioma of the larynx, which he removed by the usual laryngo-fissure (*Proc. Roy. Soc. Med.* (Laryngol. Section), January, 1915). The growth was limited to the central three-fifths of the cord. It was removed in one piece, including the vocal process of the arytenoid. No Hahn's tube was used. The microscopical appearances were those of an early epihelioma, consisting of a downgrowth of altered squamous epithelium into the underlying tissues. As the growth extended posteriorly close to the line of excision, a second laryngo-fissure was carried out eight days later. The stump of the arytenoid cartilage showed that the cord has been removed close to the base. A sweep of tissue subglottic to this area was removed. On histological examination, it was found that this tissue contained a tiny downgrowth of squamous tissue, which the author states was the posterior edge of the epithelioma. The patient made a rapid recovery.

British Medical Association News.

SCIENTIFIC.

A clinical meeting of the New South Wales Branch was held at the B.M.A. Building, 30 Elizabeth Street, Sydney, on May 14, 1915, Dr. George Armstrong (the President) in the chair.

Dr. W. F. Litchfield read notes on two cases of *keratosis spinulosus*. The patients were demonstrated. He stated that the first patient was a child, aged two years, who had been affected for 18 months. His elder brother, aged four, was also affected, but to a less extent. The eruption in the former was situated on the outer side of the limbs, and on the pinnæ. It was particularly marked and plentiful on the legs. He drew attention to the nutmeg-grater character of the papular eruption. In profile, the spinules were seen jutting out. The early papules were crowned with a dark plug. The papules consisted of a heaping up of the epithelium of the hair follicles. In addition to the peculiar eruption, the patients both had scanty, dry hair. The condition was a rare one. He preferred to call its keratosis spinulosus and not k. pilaris, because the latter designation was frequently used for an eruptive condition of the nature of ichthyosis, affecting the skin of the elbows. He had not seen a case before, but Frank Bennett had described one to the Branch a few years before. The condition was quite distinct from xeroderma and ichthyosis. In regard to eruption itself, he pointed out that there was no thickening of the cutis with shedding of the epidermis, as in xeroderma. This affection was confined to the hair follicles. Nothing was known of its pathology or pathogenesis, and he called attention that it was not even mentioned in text-books like that of Adamson. In his cases, the parents were quite healthy, and the children were well, save for the eruption. He had employed thyroid gland in the treatment, and he had applied resorcin and salicylic acid locally. The mother believed that there was some improvement, but he thought this was a little imaginary.

Dr. Paul spoke of cases of this condition affecting the neck, which he did not think were really uncommon. In regard to the pathology, he described the condition as a hyperkeratosis, originating in the area of the hair follicles. The dark centre was due to cornification and deposit of pigment, similar to that of comedo. In reference to treatment, he stated that the cases all got well under resorcin and salicylic acid applications, the chief point being the strength of the remedies.

Dr. Binnie asked whether caustics had been applied to small areas of the affected skin.

In his reply, Dr. Litchfield still maintained that the condition was a very rare one, as he had not seen a single case before. He was prepared to increase the strength of the salicylic acid.

Dr. A. E. Finckh read a paper on the diagnostic value of the examination of test meals, based upon 100 examinations. He pointed out that the wished to present in a tabular form the results obtained in the chemical examination of the gastric contents in cases suspected of gastric carcinoma. The methods adopted by him were those practised by Freund, of Vienna, who had endeavoured to reduce all routine tests to a maximum of simplicity consistent with accurate and reliable work. The tests were limited to the examination of test breakfasts for total acidity, free HCl and lactic acid. Microscopic examination for lactic acid bacilli was carried out in all cases in which lactic acid was found, as in these cases, the bacilli were invariably present. The tables had been constructed to demonstrate the value of the analysis for free acid and lactic acid in the diagnosis of cancer of the stomach. One hundred patients had been subjected to the test. The clinical diagnoses varied considerably. In some cases, it was "tumour of the stomach" or "malignant disease of the stomach," while in others it was vague, *e.g.*, "pain after food." A table had been set up giving these clinical diagnoses, and supplementing them with the ultimate diagnoses, *i.e.*, the diagnoses made at the operation or post-mortem examination, or confirmed by the clinical course and result of treatment. Against each patient the total acidity, the free HCl and the absence or presence of lactic acid was recorded. A second table gave the summary in regard to free acid and lactic acid.

	Free HCl.	Lactic Acid.	Carcinoma. Cases.	Not carcinoma. Cases.
Set I. ..	—	+	19	2
Set II. ..	—	—	4	19
Set III. ..	+	—	5	46
Set IV. ..	+	+	1	4

In explanation of this table, he pointed out that when lactic acid was present and free hydrochloric acid absent there was strong evidence of malignant disease of the stomach. He therefore asked members to regard this chemical find as a reasonable basis of this diagnosis. He pointed out that if an operation should be performed whenever the chemical examination revealed the conditions embodied in Set I., before any tumour could be felt, considerable benefit would accrue. At times, surgeons had opened an abdomen and had found nothing in cases of malignant disease, but he ventured to think that, even under these conditions, benefit would result from the gastro-enterostomy. He called attention to the condition of total acidity in the four sets. The findings were as follows:—

			Total acidity.					
	Free. HCl.	Lactic Acid.	Malignant cases. Avge.	Max.	Min.	Non-malignant cases. Avge.	Max.	Min.
Set I. ..	—	+	50	118	12	26	(1 cs. only)	
Set II. ..	—	—	32	54	12	43	112	2
Set III. ..	+	—	45	67	25	61	120	20
Set IV. ..	+	+	46	(1 cs. only)		72	82	64

From these figures, it would be seen that the highest total acid values were met with in non-malignant cases with free HCl present, while the presence or absence of lactic acid did not appear to influence the total acidity value. It must be remembered that hydrochloric acid might be bound with albumoses and peptones before the test is applied. But in spite of this fact, the readings of the free HCl proved to be of practical utility. In reference to the lactic acid, it was usually taught that lactic acid bacilli were present only in the stagnant remains of a meal, and that they always indicated an infection. When the simple test breakfast was given on an empty stomach, it must be assumed that the bacilli had remained adherent to the surface of the malignant growth or ulcer.

Dr. Finckh found that the whole question of the chemistry of the gastric juices was extremely complicated, and that many points had not yet been worked out. He was unwilling to enter into a philosophic discussion on academic points, but the object of his communication was to call attention to the practical value of these chemical examinations, as shown by his tabulated results. He thought that it would be advisable if pathologists at other large hospitals would record their result in a similar manner.

Dr. Oliver Latham referred to an investigation which he had undertaken some five years before, in connexion with the gastric function of the insane. After dealing with the methods employed in this study, not only in regard to free HCl, but also of protein-combined HCl, he referred to the statement of Webster to the effect that if the average total acidity be taken as 100, 50 might be attributed to free HCl, 25 to protein-combined HCl, and 25 to phosphates, etc. He had found that the values were rarely as high as this. He had started with normal individuals, and had found that the average total acidity was approximately 60. Of this, from 45 to 50 was HCl, and there was therefore very little left for protein-combined hydrochloric acid and phosphates, etc. When he came to examine the gastric contents of the insane, he was struck by the fact that the acid values were considerably lower. In certain classes of cases, the protein-combined HCl was in excess of the free acid. For example, he found that in general paralysis of the insane, the free HCl was 10, instead of 35 or 40. Again, when patients were fed by tube, the free acid was considerably lowered. A curious observation had impressed itself on his mind. In several of these cases, the returned test meal was of the consistency of purée, while in other cases, the food was returned in practically the same condition as when it was passed into the stomach. In conclusion, he made a few observations on the pepsin content

in cases with absent free HCl. He had added HCl to the required strength to the recovered secretion, and had tested the peptic digestion on fibrin carmine. The digestion was completed almost as readily as in normal gastric secretion, proving that pepsin was not deficient. In other respects, he had made approximately the same experience as Dr. Finckh had in connexion with malignant disease of the stomach.

Dr. Corlette spoke of his own not inconsiderable experience of the chemical examination of gastric contents during the course of 15 years, and stated that he was disappointed with these tests. The majority of practitioners over-estimated the importance of a gastric analysis in the diagnosis of cancer. Dr. Finckh had claimed that free HCl was absent and lactic acid present in many cases of malignant disease. Unfortunately, cases of malignant disease of the stomach were met with in which the HCl was present in excess. He had made the experience some years ago of having diagnosed gastric ulcer on the ground of an excess of free HCl. The patient died a few years later of malignant disease. Dr. Corlette was of opinion that if the surgeon waited until the chemical analysis became typical of malignant disease, the growth would be too advanced for surgical treatment. He contended that malignant disease of the stomach was primarily a surgical condition. Whenever there was the least doubt in regard to the nature of the complaint, he advised opening the abdomen. In this way, it was possible to catch a tumour early enough to perform a resection with a fair prospect of cure. Even if the disease recurred after an early resection, death would be delayed for a considerable time and the suffering of the patient markedly minimized.

In regard to non-malignant cases, the chemical analysis was still more variable. In order to demonstrate the diagnostic value of this test, it was necessary to tabulate the records of 1000 or 2000 cases. He was doubtful whether any number of analyses would give constant results in gall-stone or in chronic appendicitis. On the other hand, he was convinced that the information should be obtained. He still employed test meal analysis, but did not place too great reliance on the results. The findings should be weighed with all the other factors before a diagnosis was arrived at.

In regard to the adoption of a test breakfast, as described by Dr. Finckh, he regarded this as an important matter. In view of the fact that the amount of protein was small and constant, the error in regard to combined acid would be constant and small.

Dr. Latham had found 45 to 50 the average value of free HCl. With this he agreed. The condition met with when the values were higher might be generalized as fermentation. In the majority of cases, stasis was the cause of this condition. Turning to the tube-fed patients, it was interesting to recall the experiments of I. P. Pavloff concerning tube-feeding in dogs. These experiments proved that the preliminary stimulation induced by the taste of the food was followed by a preliminary pouring out of gastric secretion. When a tube was used, this preliminary act was wanting. He was inclined to regard the dog as a safe example of what took place in man. Pavloff further showed that habitual diet played a not inconsiderable part in the determination of the quantitative composition of the gastric secretion. A dog fed chiefly on meat secreted a proportionately large amount of free HCl, while one fed largely on bread secreted much less acid. He suggested that a similar factor might be acting in the patients spoken of by Dr. Latham. He was convinced that occasional analyses of gastric secretion were valueless, and that it was necessary to continue the study of this subject.

Dr. J. Flynn objected to the mere tabulation of results of analyses of gastric secretion in the diagnosis of malignant disease, unless consideration were given to the significance of the presence of free HCl or its absence. Dr. Finckh had not touched on this point at all. Dr. Corlette had given a part of the explanation, namely, that appetite acted as a stimulus in the production of acid and pepsin secretion. But appetite alone was not the whole explanation. Modern physiology had divulged a most important fact. There was the constant inter-relation between the different portions of the digestive track. The inter-relation was effected not through nervous association, but through those substances which are known as hormones. When the stomach passed on too much acid material to the duodenum, a message was sent up by these hormone messengers from the latter to close the pylorus. The pylorus would not be re-opened until the duodenum had been able to neutralize the acid. On the other hand, as soon as the alkaline secretion of the duodenum had effected the neutralization, its secretion stopped and the pylorus again allowed gastric contents to pass downwards. The pyloric secretion was effected by the glands of Edkins, and the balance between the duodenal secretion and Edkin's secretion was governed by hormonic activity. It could be readily understood that according to the amount of glandular tissue in the pylorus involved, so the amount of free acid secreted would vary. If much pylorus were interfered with, hormones would not be sent down to the duodenum, and those coming from that situation would not be able to act. The result would be a diminished secretion of free hydrochloric acid. He failed to see the use of general tables dealing with the bald results of analyses, unless the amount of pyloric involvement were taken into consideration.

Dr. Binnie asked for information in regard to the table giving the diagnoses of the various cases. The value of the table would be small unless the physical signs in each case were set forth. He also said a few words on the illustration Dr. Finckh had used in support of operating in all cases with absent free HCl and present lactic acid. Dr. Finckh had said that when nothing was found, a gastro-enterostomy would prove beneficial. In his experience, gastro-enterostomy in cases of this kind was most disastrous.

In his reply, Dr. Finckh begged to be excused from replying to the philosophical and academic aspects of the question. He did not feel justified in entering into a controversy on these matters. To Dr. Latham he said that he was of opinion that it was not justifiable to assume that no hydrochloric acid had been secreted because there was no free acid. It was quite possible to get a considerable quantity of combined HCl and no free HCl at all. In reply to Dr. Corlette, he agreed that the majority of surgeons were disappointed in the results of gastric analyses. He thought that the patients should come to the physician in the first place, and believed that the physician and pathologist would effect an earlier diagnosis than the surgeon. He pointed out that the examinations referred to in the various sets were carried out for the purpose of diagnosing or excluding cancer. In reply to Dr. Binnie, he regretted that signs given in the table were vague, but they were all that had been given to him. He admitted that entries like pain after food, etc., were of no practical value.

Dr. G. S. Thompson read a paper on some *surgical uses of celluloid*, illustrated by a number of celluloid filigrees, medullary pegs and plates.

In the course of his remarks, he claimed that celluloid possessed great value for filigrees in the treatment of large herniæ which required more than sac ligation. He expressed the opinion that celluloid was superior to metal, on account of its flexibility. The femoral filigree consisted of a triangular plate, perforated and provided with a flange on the outer border for the reception of the femoral vein. The inguinal filigree was semi-elliptical. It was provided with a gap for the passage of the cord. Plates for umbilical and post-operative herniæ were also described. The celluloid used varied in thickness from that of a photographic film to that of ordinary cardboard. Plates freely perforated caused a cellulo-plastic exudation to be thrown out, and this led to a fibrous capsule around the whole plate. If a plate riddled with holes were left embedded in tissue for a day or more, it was extremely difficult to remove it on this account. When fixation was undesirable, the perforation was omitted or limited to the periphery. The speaker insisted that a plain, smooth plate provoked little or no reaction. In certain parts of the body the celluloid might have to be moulded to be in contact with underlying tissue. For this purpose, heat applied by boiling or by dry heat would render the material plastic and sterile. He stated that celluloid did not undergo absorption, at all events to any appreciable extent. If a

plate be buried under aseptic precautions, it did not provoke any harmful reaction, the wound healed well by primary union and the plate did not cause any subsequent inconvenience to the wearer. He claimed that, apart from faulty technique, suppuration need not be considered. He mentioned other advantages.

In regard to the suggested applications of celluloid, he mentioned plates for the purpose of covering defects in the skull. In this instance, the plate corresponding to the inner table should not be perforated if possible, save for a row of minute punctures at the margin for fastening the plate. He also suggested this material for replacing lost or destroyed portions of dura mater. In the next place, he mentioned celluloid as a material for restoring the bridge of the nose. Celluloid could be utilized in arthrectomy with advantage, since the results of this operation were very unsatisfactory. The next application of celluloid referred to was for pegs in fractures of long bones. He demonstrated a number of pegs, which he believed to be stronger than bone or magnesium and more adaptable than horn or metal. He described the methods in general use by wires, screws, plates, etc., as crude and imperfect, and claimed distinct advantages for celluloid pegs on account of the perfect alignment, non-interference with osteo-genetic tissues and simplicity in application. The work on medullary pegs carried out by Groves had led him to modify this method by substituting celluloid for metal. In spinal caries and spina bifida, good results should follow its use. In conclusion, he spoke of substituting celluloid for the specially prepared flanges for use with empyema tubes.

In the course of the discussion which followed, the ordinary rules of debate were varied after a short time, and a spirited, interesting conversational discussion ensued.

Dr. Abbott was chiefly interested in the bone pegs. He wished to know whether Dr. Thompson had any special method of removing these pegs if they should cause irritation or if suppuration should occur. He was doubtful whether a medullary peg would be as useful as a plate, and he would not admit that the latter were at all unsatisfactory. Later, Dr. Thompson admitted that he had not yet employed pegs in the treatment of un-united fracture, but, in spite of this, he was convinced of their material advantages over all other methods. He based his opinion largely on the articles published by Groves.

In regard to filigree work, Dr. Abbott had never found it necessary to use this work. He had usually been able to close the aperture of a hernia by mobilization of the parts and by bringing down a flap of the rectus muscle.

Dr. Binnie doubted the advance effected by the introduction of celluloid. He agreed that celluloid might be an advance on metal plates, but he was of opinion that surgery had shown a great advance on that. Autogenous bone grafts were superior to any foreign body. He had demonstrated the results he had obtained in spinal curvature (see *The Medical Journal of Australia*, August 22, 1914, p. 192). In the case of non-union of fractures, he would prefer to use a portion of the radius to a piece of celluloid. The piece of radius could be removed without destroying the function of the forearm, if care were taken to preserve the periosteum, from which new bone would form to cover the defect.

Dr. Corlette agreed with Dr. Binney that in the repair of bone, surgery could do better than use a substance like celluloid. The results of autogenous bone grafts were very good. He raised the whole question of foreign bodies, and mentioned that there were other satisfactory methods. In regard to large inguinal herniæ, it was a frequent experience to operate with the object of placing the patient in a condition to wear a truss. The defects were so large that no known method could effect an ideal result, and it was satisfactory to render the patient comfortable and safe by reducing the size of the aperture, and giving him a truss which would control his hernia. He was afraid that celluloid plates would not command better results than those obtained by the older methods. On the other hand, he was quite prepared to believe that celluloid might be useful for skull operations, and might be even better than fascia lata.

Dr. Chenhall raised the question of the practicability of applying celluloid plates for large umbilical herniæ. He pointed out that with a weakened abdominal wall, it was by no means easy to understand how the plate would be fixed. If the rectus were drawn together over the plate, after it had been inserted beneath the sheath of the rectus, the plate would have to be driven at least another two or three inches in.

In the course of the further conversation, objection was raised to the use of plates of celluloid for umbilical herniæ on the ground that great difficulty would be experienced in their adjustment, that better results would be likely to follow Mayo's operation, and that from a physiological point of view, the introduction of the plates would not necessarily produce a strengthening of the abdominal wall. Dr. Thompson met the various objections with some ingenuity and skill. It appeared at first as if he did not attempt to close the aperture in large umbilical herniæ, but later he stated that when this was possible it should be done. Some difference of opinion existed among the speakers whether this was possible in the ordinary severe case. After he had sketched a rough diagram to illustrate the method of introduction of the plate between the rectus sheath and the sub-peritoneal tissue, from which it would appear that he employed a longitudinal suture, on being faced with the fact that this method could not result in a sufficient support, he claimed that he practised transverse suture, as employed in Mayo's operation. His objection to Mayo's operation was that it was unnecessarily extensive. Dr. Abbott did not agree with this view. He explained that, should it become necessary to remove the bone peg, all that was necessary was to saw through the line of fracture and to separate the fragments.

A meeting of the Eye and Ear Section of the Victorian Branch was held at the Eye and Ear Hospital, Melbourne, on April 27, 1915, Dr. S. A. Ewing (the President) in the chair.

The President, on behalf of the members, wished Mr. W. Kent Hughes *bon voyage* and a safe return. Mr. Kent Hughes thanked the members for their good wishes. He was glad to be able to go to the war. He expressed his gratification that the British War Office had at last recognized specialists.

Mr. Edward Gault gave notice that he would open a discussion on the desirability or otherwise of the continuance of the existing relationship between specialists and lodges.

Dr. S. A. Ewing showed three cases of *laryngeal growth*. In the discussion of these cases, Mr. Kent Hughes expressed the opinion that the chief difficulty in diagnosis of these cases was the absence of symptoms until the disease was far advanced. His experience led him to the conclusion that these growths usually started from the œsophagus and extended upwards and downwards. Very little could be learned by either direct or indirect examination. The removal and examination of a superficial gland was a most valuable aid to the diagnosis. His experience of operative measures was not too happy; all his cases had been found to have been too far advanced.

Mr. Edward Gault showed a case of *scleral rings* round the *optic discs* in a patient with a low degree of hypermetropic astigmatism. The rings were irregular in breadth, and resembled those seen in cases of high myopia. There was no pigmentation or sign of inflammation, and the vision of each eye with correction was $\frac{6}{9}$. He raised the question whether the condition was a congenital defect or the result of past choroiditis.

Dr. Norman E. Gibbs demonstrated a patient who was suffering from *sub-retinal haemorrhage*. The patient was a billiard-marker, aged 26 years. Nine weeks previously he was sent to Dr. Gibbs with the history of a black mist constantly present before the left eye. This had been present for five days. His previous health had been good. There was no history of specific disease. No albumin was detected in the urine.

The vision on the right side was $\frac{6}{4}$ and on the left $\frac{6}{36}$ (dim). No error of refraction was present. On ophthalmic examination a definite neuro-retinitis was seen in the left eye. Gross recent hæmorrhages were present in the region of the optic disc. Some vitreous opacities were noted,

localized to the region of the retinal disturbance. In the lower periphery of the fundus there was a well-marked patch of extensive chorio-retinitis of long standing, with coarse, finger-like processes of old, organized vitreous exudate, extending forwards into the vitreous. He showed the case to stimulate discussion, and, with the view of demonstrating the course of the condition. He was of opinion that it was of the nature of a *retinitis proliferans*, and that the prognosis was not good. Under treatment, the vision had become normal in the affected eye.

Mr. Gault expressed the view that the case was especially interesting in illustrating the extent of retinal hæmorrhage in young persons. The hæmorrhage usually extended into the vitreous. The case should be watched for changes of the nature of retinitis proliferans.

Dr. H. Barry Thomson showed a case of *papilloma of the tonsil*, and one of *ulceration of the palate*.

Mr. Kent Hughes was of opinion that the second case was syphilitic. He deplored the present tendency, especially among the members of hospital staffs, of depending on a laboratory test for the diagnosis of syphilis. He urged practitioners not to forget the clinical signs of the disease.

The following volumes have been presented to the New South Wales Branch by Dr. M. C. Lidwill, and have been placed in the Library of the Branch:—

Progressive Medicine, 15 volumes, 1910 to 1914.

Nouveau Traité de Médécine et de Therapeutique, par MM. les Docteurs P. Brouardel et A. Gilbert, Fascicules 1-12, 15, 24 (1905, 1906, 1907).

Dr. F. Tidswell has presented the following volumes to the New South Wales Branch, and they have also been placed in the Library of the Branch:—

Proceedings of the Royal Society of Medicine, Vols. 1 to 4 (1907-1911).

Journal of Physiology, Vols. 22 to 26 (1897-8—1907-8).

Journal of the Sanitary Institute, Vols. 23 to 25 (1902-1904).

The following have been nominated for election to the New South Wales Branch:—

Dr. Eric Jeffrey, Sydney Hospital.
Dr. Hans McMurdie Kennedy, Peak Hill.
Dr. Francis Hilton Watson, Bowral.

The following subscriptions to the Patriotic Fund for the Belgians have been received by the Honorary Secretary of the Queensland Branch:—

	£	s.	d.
Dr. Bourke, J. J. F., Richmond (May, June and July contribution)	3	3	0
„ Davidson, G., Sandgate (May contribution)	1	1	0
„ Robertson, W. N., Brisbane (May contribution)	4	0	0
„ Roe, A. S., Brisbane (May contribution)	1	1	0
„ Ross, A. P., Wynnum South (May contribution)	1	0	0
„ Sampson, G. A., Maleny (May contribution)	0	4	3
A Member (April and May contribution)	4	0	0

BELGIAN DOCTORS' RELIEF FUND.

South Australia.

The following is the third list of subscriptions to the Belgian Doctors' Relief Fund, organized by the Council of the South Australian Branch of the B.M.A. The Fund is open to the whole medical profession in South Australia. It will be remembered that members were asked to include in their contributions the amount which they would otherwise have spent in attending the annual dinner of the Branch. The dinner has been abandoned.

	£	s.	d.
Amount previously acknowledged	274	3	0
Dr. Barnard, C. E.	2	2	0
„ Bartley, J. F.	*2	2	0
„ Carden, H. C.	1	1	0
„ Connell, R. H.	1	1	0
„ Formby, H. H.	3	3	0
„ Gault, A. H.	†5	15	6
„ Glynn, R.	3	3	0
„ Gunson, J, B,	3	3	0
Carried forward	295	13	6
Dr. Harbison, W. H.	3	3	0
„ James, Thomas	3	3	0
„ Kellaway (Professor)	1	1	0
„ Lamb, W.	‡2	2	0
„ Magarey, Rupert	5	5	0
„ Mathwin, F. S.	1	1	0
„ Morris, B. H.	3	3	0
„ Pickering	1	1	0
„ Plummer, Violet	¶3	3	0
„ Purves	§1	1	0
„ Ross, J. McB.	2	2	0
„ Scott, Steele	†5	15	6
„ Sprod, John	2	2	0
„ Stevenson, J. R.	2	2	0
„ Stokes, A. F.	‖0	10	6
„ Teague, H. (of Perth, W.A.)	5	0	0
„ Tobin, J. R.	2	2	0
Total	£339	10	6
Dr. J. C. Verco's monthly subscription	5	0	0
Total to date	£344	10	6

* In addition 1 guinea monthly for 10 months.
† Including 10s. 6d. in lieu of annual dinner subscription.
‡ In addition 1 guinea monthly.
¶ In addition 1 guinea for three months.
§ In addition £1 monthly.
‖ Monthly subscription.

Tasmania.

The following is the first list of subscriptions to the Tasmanian Branch Fund. Members are requested to send subscriptions with as little delay as possible to Dr. James Sprent, 148 Macquarie Street, Hobart, or to Dr. C. F. Hodgkinson, 173 Macquarie Street, Hobart.

	£	s.	d.
Dr. Addison, E. J.	0	10	6
„ Allport, G.	1	1	0
„ Anderson, B. A.	1	1	0
„ Anderson, G. M.	1	1	0
„ Armstrong, H.	1	1	0
„ Clarke, A. H.	5	0	0
„ Davies, G. J. D.	1	1	0
„ Harvey, W. A.	1	1	0
„ Hawkins, Ethel M.	1	1	0
„ Hodgkinson, C. F.	0	10	6
„ Hogg, G. H.	1	0	0
„ Hoskins, A. T.	1	1	0
„ McCausland, R.	1	1	0
„ Morgan, E. H.	2	2	0
„ Muir, J. M. M.	1	0	0
„ Parker, G. M.	1	1	0
„ Patrick, J. F.	1	1	0
„ Payne, J. W.	0	10	6
„ Scott, R. G.	5	5	0
„ Sprent, James	2	2	0
„ Stephens, H. Z.	0	10	6
„ Sweetman, H. W.	0	10	6
Total	£30	12	6

New South Wales.

During the week ending May 18, 1915, a further sum of £38 6s. 6d. has been received by the Council of the New South Wales Branch in aid of the Belgian doctors. The subscriptions are as follows:—

	£	s.	d.
Amount previously acknowledged	518	16	0
Dr. Boazman, W. H., Parkes	2	2	0
„ Caspersonn, E., Ardlethan	0	10	6
„ Corfe, A. J., Glen Innes	1	1	0
„ Devlin, H. W., Manly	1	1	0
„ Dowling, N., Young	1	1	0
„ Ebsworth, R., Echuca, Victoria	2	2	0
„ Foreman, J., Sydney	26	5	0
„ Grigor, W. E., Sydney	1	1	0
„ McDouall, H. C., Gladesville	1	1	0
„ Studdy, W. B., North Sydney	2	2	0
Total	£557	2	6

Our attention has been called to an error in the list published last week (page 446): For "Dr. Bradley and Dr. Warren, Sydney, £5 5s.," read "Dr. A. J. Brady and Dr. Charles F. Warren, £5 5s."

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Medical Societies.

OPHTHALMOLOGICAL SOCIETY OF NEW SOUTH WALES.

A meeting of the Ophthalmological Society of New South Wales was held in the Sydney Hospital on May 5, 1915, Dr. R. H. Jones (the President) in the chair.

Dr. Odillo Maher showed a case of *lymphoma*. The patient had been presented at two previous meetings. He had been practically cured.

Dr. Maher also showed a case of *nodular conjunctivitis*. He stated that this was probably the first case of its kind recorded in New South Wales. It was apparently caused by caterpillar hairs entering the eye while clearing scrub. The history was quite clear as to the caterpillar nest falling on the eye, but no hairs were discovered. When first seen, the lids were swollen; there was marked lacrymation and photophobia; the conjunctiva was red and swollen, and a vesicle was present on one cornea. Atrophine was given, the vesicle cauterized, and the conjunctival sac swabbed out with cotton wool. The condition had improved slowly, but it had not cleared up completely. The corneal condition gave no further trouble, but he suffered from repeated relapses of conjunctival and episcleral congestion, with lacrymation and photophobia.

Dr. Odillo Maher also exhibited a family tree, showing six generations of *aniridia*. The first five generations were published in the transactions of the Australian Medical Congress (second session). The ratio of males affected was 12.27 and the ratio of females affected 12.5. This showed that females were affected nearly twice as often as males.

Mr. Temple Smith showed two cases of *tubercular keratitis*, and remarked that during last year he had met with six cases of parenchymatous keratitis, which he believed were tubercular. Unless the affection was undoubtedly syphilitic, he made it a practice of having the serum tested for the Wassermann reaction, and to apply tuberculin. Stephenson and Butler had found that about 25% of these cases were tubercular. The speaker's patients were all adults, the majority of whom were between 20 and 25. Interstitial keratitis was an uncommon complaint in hospital patients. Cloudiness of the cornea was common to all cases of keratitis. It was most often excentric, starting at the limbus; at times there was a leash of vessels extending from this situation. At times it took the form of a central disc or plaque, and was nodular. It then consisted of small, discrete spots, with a denser centre and a hazy margin, and was probably identical with the condition spoken of as nodular or reticular keratitis. There was often a generalized injection, but the injection was localized in the limbal cases. Photophobia appeared to be less prominent than in the specific cases. Keratitis punctata was only found in one or two cases. Pain was usually complained of in the early stages. In his cases, the condition was unilateral. He turned his attention to cases in which syphilis could be excluded, as a result of the Wassermann test, the type of lesion and the circumstances of the case. He held the opinion that a negative Wassermann reaction was strong evidence in favour of a tubercular origin. Although these cases were very intractable, they responded to tuberculin therapy. All his patients with one exception were females. The majority had been seen within one month of the onset. In addition to his six cases, he referred to a number of other tuberculous affections of the eye, *e.g.*, episcleritis, choroiditis, and phlyctenular keratitis, which had either been cured by tuberculin or were improving under this treatment.

For diagnostic purposes, he used 1 mgr. of O.T. If no reaction ensued, 5 mgrs. were given, and if this dose failed to produce a rise of temperature, he gave 10 mgrs. He regarded a temperature of over 99.5° as a reaction. A local reaction was more conclusive and still more so was a focal reaction in the eye. When he obtained a reaction with tuberculin and the Wassermann test was negative, he sent his patient to the St. Vincent's Hospital, where Dr. Walton Smith carried out treatment with tuberculin. The patient was required to provide herself with a thermometer, and to weigh herself regularly. Bacillary emulsion was used, and the initial dose was $\frac{1}{40000}$ mgr. The dose was doubled every third day, unless a reaction occurred. Later, the increase was reduced to half the dose, up to ½ mgr. If no improvement resulted, the bovine strain of new tuberculin was substituted. In addition to this treatment, he gave a subconjunctival injection of 1 c.cm. of normal saline solution twice a week, and instilled atropine. Marked improvement was usually seen after 2 to 4 weeks. In two instances the patients were getting worse when other remedies were applied, but began to improve shortly after tuberculin was started.

Dr. Halliday pointed out that a similar condition was caused by oral sepsis. The London ophthalmic surgeons were not enthusiastic in regard to the results of tuberculin therapy.

Dr. Cyril Shepherd showed a case of *retinitis*. The patient was a girl, aged 17 years. She was a tubercular contact, and gave a positive tuberculin reaction to a test dose of 0.2 mgr. of O.T. A course of tuberculin was started, but after three injections of 0.001 mgr. she awakened one morning to find herself almost blind. When seen two days later the vision was fingers at two feet. The vitreous was so full of fine opacities that the fundus could only be dimly seen. The discs appeared to be blurred and hyperæmic, with a small hæmorrhage at the edge of the right disc. The veins were distinctly tortuous and dilated.

Five days later, nothing had been discovered by the physician to account for the optic neuritis; the condition was unaltered. She was ordered mercury by inunction.

The vitreous cleared considerably during the following 12 days, and the fundus could be examined more thoroughly. The macular region of both eyes showed a marked, star-shaped figure of fine white dots and lines, suggesting albuminuric retinitis. The urine was again examined, and was found to be normal. Apart from the positive reaction to the diagnostic injection of tuberculin, she seemed to be perfectly healthy.

Suggestions were invited as to the cause of this condition; but the members present were unable to throw any light upon the subject.

Dr. Guy Antill Pockley read the notes of a case of *filamentous keratitis*, occurring in a man, aged 27 years. When first seen, the patient gave a history of inflammation and patchy redness of the right eye for three months. The eye was divergent. There was slight ptosis, a very chronic conjunctivitis and a large amount of conjunctival thickening in both eyes. The thickening was more marked on the right side. The right cornea had two minute points, which presented the appearance of having been stained yellow with fluorescin. There was an irregular projection at the margin. The pupil was firmly bound down and contracted, and could not be dilated with atropine and cocaine. The vision of the right eye was $\frac{6}{6}$ — (3 letters). The patient was deformed, and Dr. Pockley regarded the condition as congenital spastic diplegia.

The treatment consisted in touching the stained points with absolute alcohol, and brushing the lids with silver nitrate a few times to get rid of the thickening. Improvement was effected during two months, at the expiration of which the conjunctival condition had cleared up. There had been no further corneal trouble in the interval.

Six weeks later he was seen again. He had had a narrow escape from a burning house, and was excited and worried, having lost everything he had in the fire. The right cornea was in a condition of filamentous keratitis. This condition was, in Dr. Pockley's opinion, sufficiently uncommon to warrant a detailed description.

There was typical ground-glass appearance of the cornea and marked ciliary injection. A number of long filaments

were seen attached to one end of the cornea. These were cobwebby in their fineness, and were from $\frac{1}{16}$ to $\frac{1}{4}$ inch in length. They were expanded distally into club-shaped appendages. These appendages took up fluorescin without becoming stained green. The yellow stain could be washed away. They were associated with pain and photophobia. The appendages were removed and were shown to consist of elongated, flattened, epithelial cells at the fine extremity and cubical epithelial cells at the distal end.

Two long filaments appeared four days later, and within three weeks eight more formed. During the following two months 41 filaments were seen at different times. There had been no others for close on a month. The pain was so severe that the patient asked Dr. Pockley several times $\frac{6}{36}$ to remove the eye. As the vision was — he was unwilling to do this, in spite of the divergence. The pain disappeared entirely within 24 hours of the removal of the filaments, and the ground-glass appearance and the injection also cleared up rapidly. He was convinced that the filaments did not arise from ruptured bullæ or vesicles of the corneal epithelium. He had only seen one similar case.

In regard to treatment, the speaker stated that he had tried oxide of zinc, various organic and inorganic silver salts, dionin, atropine and eserin. The processes were removed with a knife, and patches were scraped down to the *substantia propria*. The processes were also removed with absolute alcohol and pure carbolic acid. He had the impression that the greatest benefit followed the use of eserin and dionin, and the interval between removal and the recurrence was longest after destroying the pedicle with absolute alcohol. The pathology of the condition was obscure, and while it had been stated that the disease undergoes spontaneous cure, his experience, more especially in regard to the seclusion of the pupil and the acute attacks of inflammation in his case, led him to the conclusion that it was unwise to leave these cases alone.

Dr. Shepherd mentioned that he had treated a case similar to the one described by Dr. Pockley by sewing the lids together permanently. After about six months, the lids were separately at the patient's request, as the eye had been quiet in the interval. There had been no return for four or five months.

Dr. J. C. Halliday showed a case of *aniridia, with coloboma* of the lens in both eyes, and a case of *retinitis pigmentosa*.

Dr. R. H. Jones reported that the eye in a case of implantation cyst which had been seen at a previous meeting had become glaucomatous, although the cyst of the iris had been removed.

Dr. Odillo Maher said that implantation cysts were nearly always connected with delayed union after cataract extraction. He advised early cauterization of the incision. He explained the glaucoma in these cases by the fact that the iris was lying against the back of the cornea, and became adherent to it at the base.

Public Health.

THE HEALTH OF NEW SOUTH WALES.

The following notifications have been received by the Department of Public Health of New South Wales for the fortnight ending May 10, 1915:—

Disease.	Metropolitan Combined District. Cs.	Dths.	Hunter River Combined District. Cs.	Dths.	Rest of State. Cs.	Dths.	Total. Cs.	Dths.
Enteric Fever	36	0	3	0	61	1	100	1
Scarlatina	181	2	20	0	123	0	324	2
Diphtheria	130	3	13	0	176	4	321	7
Malaria	11	0	—	—	—	—	11	0

There has been a general diminution of cases of enteric fever and scarlatina, and a slight increase in the number of diphtheria cases as compared with the previous fortnight. In the corresponding fortnight of 1914 there were 159 cases of enteric fever, with five deaths. Enteric fever was prevalent in Botany during the period ending May 10, 1915 (13 cases), while there were 11 cases at Tamworth, 8 at Broken Hill, 5 at Orange, and 4 at Mascot and Molong respectively. The incidence of scarlatina was high in the majority of the metropolitan districts. In the city of Sydney there were 23 cases; in Canterbury and Marrickville there were 11 each; and in Newtown there were 10. In regard to diphtheria, 21 cases were reported in the city of Sydney. At Broken Hill there were 36 cases; at Murwillumbah there were 11; at Albury and Crookwell there were 7 each; and at Dubbo, Goulburn, and Wickham there were 5 each.

THE HEALTH OF QUEENSLAND.

The following notifications have been received by the Department of Public Health of Queensland for the week ending May 8, 1915:—

Disease.	No. of Cases notified.
Enteric Fever	21
Scarlatina	4
Puerperal Fever	1
Diphtheria	39
Pulmonary Tuberculosis	9
Anterior Poliomyelitis	5
Varicella	2
Total	81

HEALTH OF THE METROPOLIS OF SYDNEY.

The mortality return for April, 1915, as supplied by the Government Statistician, shows that 560 deaths occurred in the Metropolis, including 33 deaths of individuals previously residing outside the Metropolis, and deaths classified as taking place in the Islands and shipping in the harbour.

Thus, calculating on an estimated population of 752,500, the annual death-rate for the month works out at 8.93 per 1,000 of the population.

Deducting the deaths of persons non-resident in the Metropolis, in the Mental Hospitals of Leichhardt and Hunter's Hill (Callan Park and Gladesville), and adding the deaths of persons residents of the Metropolis occurring at the Benevolent Asylum, Mental Hospital, and Consumption Sanatoria situated outside the Metropolis, the number of deaths was 567, giving a corrected death-rate of 9.03 per 1,000.

Among children under one year of age, 115 deaths were recorded for the Metropolis.

There were 1,814 births during the month, giving the satisfactory rate of 28.93 per 1,000 of the population, being 6% above the average of the previous five years.

The infantile mortality-rate was 64 per 1,000 births; the rate is most satisfactory, being 21% below the average for April of the previous five years.

Infective diseases were responsible for 21 deaths, of which 1 was due to morbilli, 2 to scarlet fever, 2 to pertussis, 7 to diphtheria, 3 to enteric fever, and 6 to puerperal fever. Diarrhœal diseases were credited with 36 deaths, of which 26 were under one year of age.

Pulmonary tuberculosis caused 41 deaths, cerebral hæmorrhage 27, and cancer 44. Diseases of the heart and blood vessels 76, Bright's disease 28, prematurity 38, and senility 29.

Compared with the average in April during the previous five years, there were increases in the number of deaths from pulmonary diseases and cerebral hæmorrhage, with decreases in diarrhœal diseases, epidemic diseases, phthisis, and Bright's disease.

Four hundred and fifteen cases of scarlet fever, 194 of diphtheria, 73 enteric fever, 18 of acute malarial fever, and 1 of anterior polio-myelitis were notified during the month of April.

Sixteen cases of phthisis (consumption of the lungs and larynx) were notified under the City Council by-laws, and 12 premises were disinfected by the Council's trained staff after the death or removal of the patient.

(Signed) F. M. SUCKLING,
Acting Medical Officer of Health.

Vital Statistics.

THE VITAL STATISTICS OF SYDNEY AND NEWCASTLE.

The Government Statistician has issued his returns for the month of April, 1915, dealing with the births and deaths registered in Sydney and Newcastle.

In the metropolis of Sydney, 1814 infants were born during the month. Males numbered 941 and females 873. The birth-rate is equivalent to an annual rate of 28.93 per 1000 of population, which is higher than the average of the previous five years, namely, 27.22. Of the infants born, 129 were illegitimate. The average number of illegitimate children born in the preceding five Aprils was just one less. The illegitimate birth-rate was equivalent to an annual rate of 2.06 per 1000 of population. Of the total number of births, 18% took place in hospitals and other institutions.

The number of children under 1 year of age who died in April was 117, which is 21 less than the average for April of the previous five years. The infantile mortality was 64, as compared with 81. In 1911, the rate was 70 per 1000 births, while in 1906 to 1909 it exceeded 90 each year. During the past 12 months the rate was lowest in October (43) and highest in December (87).

The total number of deaths at all ages was 560, 304 of males and 256 of females. It will be noticed that 54.28% of the children born were male, while 51.87% of the persons dying were male. The sex of the children under 1 year of age who died is not given. The death-rate is equivalent to an annual death-rate of 8.93 per 1000 of population. The average of the five preceding Aprils is equivalent to an annual rate of 10.23. The monthly death-rate (April) of 0.74 was the lowest during the past 10 years, the next lowest being 0.75 in 1910, while the highest was 0.94 in 1912. Three persons died at the age of 90 or over, while 26.25% of those who died were 65 years or older. Over 40% of the deaths took place in hospitals and other institutions.

In regard to the causes of death, diseases of the heart and blood vessels were responsible for no less than 98 deaths, or 17.5% of the total number of deaths. Of these 46 were caused by chronic cardiac lesions, 17 by atheroma and other conditions entered as "diseases of arteries," 25 by cerebral hæmorrhage, and 3 by aneurysm. Regarded from an etiological point of view, it would seem that rheumatism laid the foundation for a large number of deaths. There were 5 deaths due to acute articular rheumatism, 2 to chronic rheumatism, 4 to acute endocarditis, and 46 to chronic endo- or myo-carditis, making a total of 57 deaths.

Again, if other arterial poisons be traced to the various causes of death, it would seem as if the 17 cases of arterial disease, the 3 of aneurysm, one of hæmorrhage, the 25 of apoplexy, 28 of Bright's disease, and 8 due to cirrhosis of the liver might be classed together. This would give a total of 82 deaths. In other words, it is probable that if prophylactic measures were adopted to combat rheumatism and other affections which lead to arterial decay, about one quarter of the total number of deaths might be prevented.

Turning to the infective diseases, it is found that of a total of 134 tuberculosis caused 36 deaths, diarrhœa and enteritis 37, acute pneumonia 21, appendicitis 10, diphtheria 7, acute rheumatism 5, acute endocarditis 4, acute bronchitis, enteric fever, and syphilis 3 each, scarlatina and pertussis 2 each, and morbilli and influenza one each. There were no doubt several other infective conditions which led to death, but from the manner in which the causes are classified it is impossible to determine them. In addition to these conditions, there are 7 cases entered under the rubric of puerperal septicæmia, and 1 under the rubric of "puerperal phlegmasia, alba dolens, embolus, sudden death." Since the last may have been independent of an infective process, it may be assumed that the total number of ascertainable fatal infections was 141. From a preventive point of view, it must be assumed that every infection is amenable to prophylactic measures. We can therefore deduce that over one-half of the deaths which have occurred in Sydney during the month of April might have been avoided had every person affected been educated to the importance of careful living, and had the whole community worked together in stamping out all preventable infective diseases.

Of the other causes of death, malignant disease was effective on 42 occasions.

In the returns for the Newcastle district we find that 197 births took place, which is equivalent to an annual birth-rate of 40.56 per 1000 of population. There were 5 more female than male infants, and 11 illegitimate ones. The illegitimate birth-rate was thus equivalent to an annual rate of 2.25 per 1000 of population. Sixteen children under 1 year of age died, which gives an infantile mortality of 81 per 1000 births. The total number of deaths was 71, affecting 3 more males than females. In 16 cases the death occurred in hospitals or other institutions. The death-rate was equivalent to an annual rate of 14.64 per 1000 of population.

Compared with the rates in the corresponding month of the preceding ten years, it appears that the death-rate was only exceeded once, namely, in 1912, and the infantile death-rate was higher than that recorded in 1913, 1910 and 1911, and lower than that recorded in the other years.

The causes of death include 10 of diseases of the cardio-vascular system, 7 of diarrhœa and enteritis, 3 each of tuberculosis, pneumonia, and acute bronchitis, 1 of diphtheria, and 1 of tetanus. There were 6 deaths due to malignant diseases, 7 to Bright's disease, and 4 to chronic bronchitis. One death was caused by an illegal operation, and one was due to puerperal hæmorrhage.

Hospitals.

ROYAL PRINCE ALFRED HOSPITAL.

The annual report submitted to the annual meeting of subscribers to the Royal Prince Alfred Hospital, Sydney, deals with the work conducted in the Hospital during the year 1914. The report is the twenty-ninth issued.

Statistical.

A more or less minute statistical analysis of the medical work is reserved for the year book, which is published as a rule later in the year. The paragraph dealing with this subject merely gives those details which may be supposed to interest the subscribing public. During the course of the year, 7,237 patients were admitted, and with the 397 patients in hospital on December 31, 1913, the total number of patients under treatment in the wards was 7,634. Of these 370 were still under treatment on the last day of 1914. Of the remaining 7,264, 4,727 were discharged "cured," 1,578 were discharged "relieved," and 520 were discharged "unrelieved." There were 439 deaths, but of this number 92 occurred within 24 hours of the admission of the patients into the hospital. In the report, the "rate of mortality" is given at 4.52%, but if the rational mode of calculating the case mortality be adopted, namely, taking the number of patients admitted, together with the number of those remaining in the Hospital at the end of the year before, less the number of those still under treatment at the end of the year under review, the mortality works out at 6.04%, or if the patients dying within the first 24 hours of their stay be excluded, it would equal 4.77%. The difference is but slight, and is of no actual importance, but if these general figures are worked out at all, they should be given correctly.

The number of beds in the Hospital is 392. In the early months of the year patients were admitted in excess of the number of beds. In April the average number of patients in daily residence was 412, while from July to September a daily average of 400 was reached. As the financial strain was considerable, orders were given to limit the number of patients admitted to the number of beds, and as a result the average for the concluding three months worked out at 371, leaving a margin of 21 for emergencies.

In the out-patients' departments no less than 31,549 persons received treatment, and 74,911 attendances were given. The number of operations undertaken during the year amounted to 4,973, and represented 65.14% of the total number of persons under treatment during the year (not of patients admitted, as is stated in the report), or 68.46% of the number of patients whose treatment was completed during the year. It is interesting to note that if it be ac-

cepted that these operations included a relative high portion of major operations, as is usual in a large general hospital, and that the average fee in private practice would work out at £25, the members of the surgical staff made a clear present to the hospital patients of £124,325. In addition to this, it may be assumed, in spite of the absence of actual figures, that the honorary physicians and surgeons who attended the remaining 2,291 patients, not subjected to operations, would have earned the sum of £45,483 had they visited these patients in private practice, and charged them a guinea per visit. The calculation is made on the basis of one visit each day, and on the average stay in hospital per patient of 19.81. Without any allowance for special, difficult and time-robbing procedures for which the public is expected to pay, it would appear that the honorary staff of this one large hospital is giving no less than £170,000 per annum to the "hospital class."

New Departments.

A new out-patient department for the treatment of tuberculous patients, with provision for night as well as day attendance, was established in 1913. The department was placed under the care of a Resident Medical Officer and two nurses. In addition the control is vested in an honorary physician. Dr. A. E. Mills held this position at first, then he received the collaboration of Dr. J. Froud Flashman, and during the year 1914 Dr. Sinclair Gillies was appointed to the position.

Annual reports of hospitals not infrequently contain surprises. The section of the report under review dealing with the night clinics for venereal diseases contains a most startling statement, to wit, that a "suggestion was made by the Minister for Health that the Board should open a special night clinique for *male and female venereal diseases*." We wonder which of the two syphilis is. The paragraph is continued as follows:—

> The subject was under discussion during the latter half of the year. The Board generally approved of the proposal, and submitted it to the Honorary Medical Staff for a scheme, which was submitted, and involved the opening of special wards for male cases. This in turn involved the immediate building of an Isolation Block, as had been promised by the Government in the previous year, but the Minister could not see his way to provide the money for the building, or the department on such a scale as that proposed, with the result that a modified scheme was submitted and approved. A deadlock followed, and finally, after overcoming considerable difficulties, the Board at last opened a clinique at the beginning of this year for patients who should seek treatment under *the rules of the hospital regarding admission*. This department at once proved to be a remarkable success, and the attendances have far exceeded those of any other out-patient department. The Minister paid a visit to the clinique on one evening, as a result of which he expressed himself as having "come to the conclusion that the very valuable work that is being performed in this direction is deserving of recognition," and the special subsidy which was at first agreed upon is now to be paid to the hospital. The Board is very gratified at this happy conclusion of the controversy.

The need for increased accommodation for patients suffering from infective disease, and also for those affected with mental ailments in incipient stages, was urged on the Minister of Health in the previous year. A promise to place the sum of £7,000 on the estimates for the purpose of erecting an isolation block was made, but the arrangement had not been carried into effect by the end of 1914. The Medical Superintendent reported that diphtheria had broken out in the wards, and that one nurse had been infected. One patient died. He also mentioned that 23 cases of pulmonary tuberculosis were present. (Provided that the patients are not allowed to expectorate save in properly constructed flasks, we fail to appreciate the risk entailed by other patients by the association with persons suffering from this condition). It is mentioned in the report that instructions have now been given for the erection at an early date of a block to accommodate the patients attending the venereal clinic, and those attending the out-patients' department for persons suffering from pulmonary tuberculosis.

Additional Accommodation.

The urgent need for additional accommodation in the hospital wards has given the Board some anxiety. No difficulty is experienced in regard to building, inasmuch as wards capable of accommodating 100 patients were occupied up to May, 1914, by nurses. These wards have been freed by the opening of the Nurses' Home, and the only difficulty remaining was one of money. After some negotiations with the Minister of Public Health, it was agreed that an additional subsidy of £8,440 per annum should be provided. The outbreak of war, however, rendered it impossible for the time to proceed with the equipment of these wards. As soon as the extra subsidy is forthcoming, the increased accommodation will be made use of.

Mention is made in the report of the fact that 20 beds were placed at the disposal of the Defence authorities for military patients.

Honorary Staff.

In regard to the Honorary Staff, the following changes are referred to in suitable terms:—Sir Alexander MacCormick resigned his position as Lecturer in Surgery, and also his office as Honorary Surgeon, a post which he had held since 1889. Dr. E. T. Thring, having served three periods of six years each as Honorary Gynæcologist, retired automatically, according to the regulations, which do not permit of his re-election after this period. The late Dr. H. Russell Nolan resigned his position of Honorary Surgeon for Diseases of the Ear, Nose and Throat shortly before his untimely death. A large number of members of the Honorary Staff was granted temporary leave of absence, chiefly in connexion with the war, but also for other purposes. The names of the members granted leave of absence during the year are:—Drs. Herschell Harris, G. E. Rennie, Arthur Verge, Hugh R. Poate, R. G. S. Godsell, H. J. Clayton, A. H. Tebbutt, C. W. Thompson, H. S. M. McLelland, Farrar and Wesley. In view of this drain on the staff, various temporary changes have been made. In regard to the permanent changes, Dr. Sandes has been elected Honorary Surgeon in virtue of the position of Lecturer in Surgery, to which he was appointed on the resignation of Sir Alexander MacCormick. Dr. Guy Warren, although eligible for re-election as Honorary Assistant Ophthalmic Surgeon, formally resigned his position.

Transport.

A tribute is paid to the valuable work carried out in connexion with the transport of patients by the Civil Ambulance and Transport Brigade.

Nursing Staff.

In the section of the report dealing with the Nursing Staff, mention is made of the formal opening of the Nurses' Home in March, 1914, where the whole Nursing Staff and a large proportion of the female domestic staff are housed. Each nurse has her own separate bedroom, and there are other distinct advantages. In regard to salaries, an increase has been made. First year probationers receive £15 instead of £10, second year probationers receive £20 instead of £15, and third year nurses £25 instead of £20. The salary of fourth year nurses remains at £40 per annum. These sums, it is pointed out, are in addition to board and lodging, uniforms, washing, etc. In the report, it is stated that the nurses receive, in addition, one month's holiday and education in their profession. This explanation appears to be strange. Either the Board has to defend itself against attacks on the score of underpayment, in which case, the statements savours somewhat of *qui s'excuse, s'accuse*, or there was no necessity to speak magnanimously of the provision of uniforms, holidays, etc., to women who give a very great amount of energy, skill and labour in return for a small payment in money and kind.

Administrative.

Reference is made to the loss sustained by the Board by the death of one of its members, Sir Normand MacLaurin. His successor is Sir William Cullen, K.C.M.G., LL.D. Sir Thomas Anderson Stuart continues to fill the

post of Chairman of the Board. During the course of the year, he received the honour of knighthood.

Finance.

The balance sheet shows a gross expenditure of £50,365 17s. 2d., including an extraordinary expenditure of £4,532 12s. 7d. An increase has been necessitated by the agreement arrived at with the Hospital and Asylum Employees' Union. This represented an increase of £2,826 in respect to salaries and wages, as compared with the year 1913, and of £6,369 as compared with the year 1912. The estimates drawn up at the beginning of the year proved remarkably accurate. It speaks of good management that the ordinary expenditure and the ordinary revenue practically balanced. In regard to the revenue, it appears that the sums derived from the public, both as voluntary subscriptions and as patients' contributions, together with the interest on invested funds, amounted to £14,057 8s. 4d., while the Government provided £31,950. The patients' contributions are divided into in-patients, £5,805, and out-patients, £525. The former sum corresponds to an average weekly payment per patient of 14s. 5d. The cost of maintenance per patient per diem works out at 6s. 7d., so that each patient costing £2 6s. 1d. per week contributes 31.3% of his own maintenance, and, of course, receives his medical and nursing attendance free.

GYMPIE HOSPITAL.

The annual report of the Committee of the Gympie Hospital for the year 1914 was submitted to a meeting of subscribers on May 6, 1915, and was adopted.

The Hospital contains 54 beds, 33 for males, 14 for females, and 7 for children. There is one resident officer, and the nursing staff has 10 members. During the year 1914 576 patients were admitted, and there were 40 patients under treatment on January 1, making a total of 616. Of this number, 584 were discharged or died, and 32 were still under treatment at the end of the year. The number of deaths was 42, which is equal to 7.19%. On the basis of a total number of patients of 616, and of the total number of days during which the patients were resident in the hospital, the cost per patient per day can be worked out. The financial statements show that the sum of £2,584 11s. 8d. was expended on the upkeep of the hospital, including maintenance. It therefore appears that 4s. 1d. was spent on each patient each day. The income of the hospital was made up of endowments to the amount of £2,675, subscriptions £1,051, patients' payments £184, and small amounts from interest, etc. The Government subsidy included a sum of £575, which was not due until January, 1915. There is no record of the details of the medical and surgical conditions for which the patients were admitted.

THE INFANTS' HOME, ASHFIELD.

The annual report of the Infants' Home at Ashfield, New South Wales, which was adopted at the meeting of subscribers on April 21, 1915, is brief, but to the point. It appears that during the year bathrooms have been added to one of the children's wards, and a day room has been enlarged and provided with better light. This work was carried out at the cost of £1300. In all 58 mothers and 120 children have received shelter during the year. One of these mothers was homeless, on account of the husband being in gaol, and the remainder were unmarried. Of the 120 children 74 were less than 12 months of age. In 75.6% of these infants artificial feeding was carried out. In view of the fact that 58 mothers were admitted with their infants, it would seem as if only 31% were enabled to feed their own babies. This percentage is deplorably low. There were 9 deaths among the children, i.e., 13.6% of the 66 children who were admitted during the year and those remaining in the Home at the end of 1913, less those remaining in on December 31, 1914, or 7.5% of the 120 children admitted and remaining in the Home from the previous year. The causes of death were acute gastro-enteritis on three occasions, pneumonia twice, broncho-pneumonia, congenital heart disease and malnutrition from birth once each.

Of the 58 mothers, 21 were in the Home at the end of the year 1913, and 37 were admitted during 1914. There were 22 in the Home on December 31, 1914. The remainder, 36, had been discharged. Of the last category, 29 returned to their friends or relatives, 5 went to situations, one to a hospital, and one to another institution. In 30 instances the mothers took their babies with them on discharge. In addition 24 other children were discharged, and returned to relatives or friends, while 3 were sent to other institutions. The average stay in the Home of mothers and children is not stated.

In regard to the finances of the Home, the maintenance cost approximately £1950, while close on £460 was carried over as balance. On the other hand, over £1460 had been carried over from the previous year as balance. Subscriptions and donations amounted to about £1262 (including interest), contributions by parents to an additional £228, and the Government subsidy to £750. The objects of the Home are so excellent that we do not share the Committee's fear that financial embarrassment is likely to result in consequence of the war. When it is remembered that unmarried mothers with their first babies, children of unmarried mothers who are mentally or physically incapable of entering the institution, orphans or children whose mothers are in hospital, or the madhouse, are all admitted and cared for, the charitably disposed public will certainly not fail to contribute the money necessary to keep the good work going.

University Intelligence.

UNIVERSITY OF ADELAIDE.

(From Our Special Correspondent.)

At the last meeting of the Council, His Honour Mr. Justice Murray was unanimously elected Vice-Chancellor of the University, in succession to the late Dr. W. Barlow, C.M.S. The appointment has met with universal approval amongst all members of the University. Judge Murray's career has been a most distinguished one since his school-days. Success at St. Peter's College was followed by equal success at the Adelaide University, and subsequently at Cambridge. Practising law on his return to Adelaide, he rapidly gained a leading position in his profession, and in 1906 was made a K.C. Twenty-three years ago he was elected a member of the Council of the University, and has acted continuously since that time. His services in that capacity have been most conspicuous, one characteristic being the great interest he has always taken in the welfare of the undergraduates.

UNIVERSITY OF WESTERN AUSTRALIA.

At a meeting of the Senate of the University of Western Australia, held on April 19, 1915, the newly-elected members—Dr. G. Mead, Mr. W. J. Hancock and Mr. G. M. Hancock—were welcomed by the Chancellor. Mr. Frank Wilson was granted two months' leave of absence.

The following committees were appointed:—

Finance: The Chancellor, the Pro-Chancellor, Dr. Roberta Jull, Mr. F. Wilson, Mr. N. Keenan, Mr. F. W. Burrows, and Mr. J. S. Battye.

Administrative: The Chancellor, the Pro-Chancellor, Archbishop Riley, Mr. T. H. Bath, Mr. J. S. Battye, Mr. W. Somerville and Mr. T. P. Draper.

Education: The Chancellor, the Pro-Chancellor, Archbishop Riley, the Minister for Education, Dr. Roberta Jull, Dr. G. E. Mead, Dr. A. Saw and Mr. W. J. Hancock.

Building: The Chancellor, the Pro-Chancellor, Archbishop Riley, Professor Whitfield, Mr. J. S. Battye, Mr. W. Somerville and Mr. W. J. Hancock.

Library: Mr. J. S. Battye and the Deans of the Faculties.

Extension Lectures Board: The Pro-Chancellor, Archbishop Riley, Mr. Somerville, Professor Dakin, Professor Murdoch and Professor Woolnough.

Among the resolutions passed was one determining that until the University had established its reputation as a seat of learning, no honorary degrees should be given to anyone who did not possess a degree of a University recognized by the University of Western Australia.

It has been announced that the total number of students at the University of Western Australia during the current year is 214. Of this number, 132 are matriculated under-

graduates. The number of students attending lectures has increased steadily during the past three years. In 1913 it was 93, and in 1914 118. At present there are but three faculties in the University, namely, Arts, Science and Engineering.

Naval and Military News.

The list of casualties published in the press during the last week includes the names of Lewis Wibmer Jeffries, M.B., B.S., of South Australia, Captain in the 4th Field Ambulance, wounded; John Willoughby Butler Bean, L.R.C.P., London, M.R.C.S., England, of Waverley, Sydney, 4th Battalion, 1st Infantry Brigade, wounded; and George Craig, M.B., M.S., Edinburgh, of Waihi, New Zealand, Captain, Auckland Battalion, wounded.

His Majesty the King has conferred the military cross in recognition of his gallantry and devotion to duty while serving with the Expeditionary Force on Lieutenant T. W. Clarke, M.B., R.A.M.C., Special Reserve (London *Gazette*, March 27, 1915).

As was announced in the daily press of May 15, 1915, H.M.S. *Goliath*, a pre-Dreadnought battleship of the Canopus class, of 12,950 tons displacement, was torpedoed on May 12, in the Dardanelles. Five hundred lives were lost. It is stated that 20 officers and 160 men were rescued. The surgeon attached to the ship was Ernest Charles Holtom, M.R.C.S., L.R.C.P., a St. Mary's Hospital man, and the temporary surgeon was Claude Hamilton Blair Avarne, M.R.C.S., L.R.C.P., of Maida Vale.

In the list of the medical officers attached to the Double General Hospital supplied to us by the Military Authorities, and published in last week's issue (page 456), Lieutenant Anderson Stuart's name is erroneously entered as Lieutenant A. S. Stuart. He is the son of Sir Thomas Anderson Stuart.

Correspondence.

THE DOSAGE OF DIPHTHERIA ANTITOXIN.

Sir,—In reference to an extract of our annual report appearing in *The Medical Journal of Australia* of 1/5/15, p. 422, I have been requested to make an explanation to remove any mistaken inference that may exist on the part of your readers.

We do not wish it to be understood that we consider small doses of diphtheria antitoxin just as effective as larger doses in a general sense. We still give doses of 90,000 or 100,000 units in malignant cases, and have come to the conclusion that doses in excess of this amount will not influence the course of the disease. This conclusion we have arrived at after giving varying doses up to 200,000 units in a large number of cases of the malignant type.

Roughly, the following would represent average doses:—

Pharyngeal cases: 8,000-30,000 units.
Laryngeal cases: 10,000-20,000 units.
Malignant cases: Up to 100,000 units.

Yours, etc.,
C. LESLIE S. MACINTOSH,
Chief Resident Medical Officer,
Royal Alexandra Hospital for Children.

Camperdown, Sydney (undated).

THE SHORTAGE OF DOCTORS.

Sir,—I was glad to read in your issue of May 15 that there was no shortage, and never had been, of doctors for the Australian Forces, particularly as it accorded with my own experience. I volunteered in September, and have pressed my claims on several occasions since, but, though well under 40 and physically fit, I have never had any official encouragement, and came to the conclusion that only Australian graduates need apply, as I know some men have been accepted who were not even qualified when I offered my services. To this one cannot reasonably object. If there is to be any preference—other things being equal—Australian graduates should have it, but when one sees in lay journals repeated with maddening persistence headlines such as "More Doctors Wanted," "Great Sacrifices Required by the Medical Profession," etc., etc., it is rather puzzling to receive these none too polite official snubs.

Yours, etc.,
"M.R.C.S."

May 15, 1915.

A CANVASSING DOCTOR—A WARNING.

Sir,—I suppose every country doctor from time to time has occasion to send patients to the city for further advice or treatment.

I don't know if they have had an experience similar to mine; but I used to find that a comparatively large number, no matter what their particular ailment, were not long in Sydney before they were being treated by a certain doctor. I could never understand how it happened, as professionally he is practically unknown, and before leaving for Sydney I feel sure none of my patients were aware of the existence of the practitioner referred to.

Just recently I discovered the reason, and it is in connexion with this that I am writing.

It appears that this doctor employs canvassers—"touts" would be a better term—who wait at the railway station for the arrival of trains from the country. They also "work" hotels much in vogue with country people. Seeing anyone obviously ill these touts insinuate themselves into the confidence of the patient or his friends. Quite "disinterestedly" they sympathize with him, then they tell of Dr. ——'s wonderful skill, also his exceedingly low charge, and so forth. And they always happen to have one of Dr. ——'s cards about them, which is handed to the patient.

Now sick people are easily influenced, and not suspecting the motives of their newly-found "friends," they are induced to consult the famous Dr. ——, which is usually the end of them or their money.

Therefore it behoves all doctors to advise patients going to Sydney strongly to beware of these tricksters, and especially to avoid any doctor whom perfect strangers rush to recommend. Otherwise, so expert are these touts at their business, that a great many patients will be led astray with disastrous results.

Needless to say, Dr. —— is not a member of the B.M.A.

Yours, etc.,
E. B. FITZPATRICK.

Mungindi, N.S.W.,
May 12, 1915.

Personal.

It has been found that information concerning individual members of the British Medical Association in Australia, collected from sources other than direct communication from the member concerned, or notification through the Honorary Secretaries of the Branches, is unreliable, and often erroneous. The object of the Personal column is to inform members of the movements of their friends. The Editor will be greatly indebted to members if they will notify him directly, or through the Honorary Secretary of their Branch, of their movements, more especially in regard to a change of address, or the fact of starting practice, leaving the Commonwealth on an extended holiday, returning to practice, and resignation of appointments. The collaboration of members in this way will render the Personal column a reliable source of information and of interest to readers. Notices should reach Sydney on Monday morning to ensure publication in the Journal of the same week.

Dr. R. Macfarlane Brown has commenced practice at Tweed Heads, New South Wales.

Dr. Marcia Moray has commenced practice at Jundah, in place of Dr. Samuel Hubert Seccombe.

Dr. L. Watson Harvey has commenced consulting practice at 169 Macquarie Street, Sydney.

Dr. Roland J. Pope, of Macquarie Street, Sydney, was among the passengers of the Royal Mail liner *Niagara*, which left Sydney on May 12, 1915.

Dr. Louisa Garrett Anderson and Dr. Flora Murray have been appointed in charge of a military hospital in London,

Dr. Garrett Anderson will bear the title of Surgeon-Major. As is well known, she has for many years been a pioneer in the movement of medical women. She was the first woman mayor, and is now the first woman major.

Dr. Harvey Sutton was presented on May 12, 1915, with a motor clock, in recognition of his services as lecturer to the Public Works (Victoria) First-Aid Class.

The death of Dr. John Nicholson occurred on May 13, 1915, at Benalla, Victoria. He was qualified in the year 1862, and has been in practice in Benalla since 1870.

Medical Appointments.

Dr. Hollow, late Superintendent of the Hospital for the Insane, Beechworth, Victoria, has been transferred to the Hospital for Insane, Monte Park, Melbourne.

Dr. A. S. Joske has been appointed President of the Medical Board of Victoria.

Professor H. R. Dean, M.D., F.R.C.P., London, Professor of Pathology at the University of Sheffield, has been appointed to the Chair of Pathology and Pathological Anatomy at the University of Manchester. Professor Dean worked for some years at the Lister Institute of Preventive Medicine, under Dr. C. J. Martin, and held the chair at Sheffield for three years.

Medical Appointments Vacant, etc.

For announcements of medical appointments vacant, assistants, locum tenentes sought, etc., see "Advertiser," page xi.

Medical Journal of Australia, Assistant (part-time).
Emerald Hospital, Central Queensland, Medical Officer.

Proceedings of the Australasian Medical Boards.

QUEENSLAND.

The following has been registered under the provisions of the "Medical Act of 1867" as a duly qualified medical practitioner:—

Gaden, Keith Burton, Townsville, M.B., Univ., Syd., 1914.

TASMANIA.

The following has been registered under the provisions of the "Medical Act, 1908," as a duly qualified medical practitioner:—

Wilson, Robert Murray McCheyne, L.R.C.P., L.R.C.S., Edin., 1911, L.R.F.P.S., Glasg., 1911.

Books Received.

A CAMPAIGN AGAINST CONSUMPTION, a collection of papers relating to Tuberculosis, by Arthur Ransome, M.D., F.R.C.P., F.R.S., 1915. Cambridge: Cambridge University Press; Demy, 8vo., pp. 263. Price, 10s. 6d. net.

PRACTICAL MEDICINE SERIES, Vol. 1, General Medicine. Edited by Frank Billings, M.S., M.D., and J.H. Salisbury, A.M., M.D. Series 1915. Chicago: The Year Book Publishers; Crown 8vo., pp. 390. Price, $1.50 (Price for the series of ten volumes, $10.00).

SCHEME FOR DEALING WITH TUBERCULOUS PERSONS IN THE COUNTY OF LONDON, by D. Barty King, M.A., M.D., M.R.C.P., with a Foreword by Professor Sir William Osler, Bt., M.D., F.R.C.P., F.R.S., 1915. London: John Bale, Sons & Danielsson, Ltd.; Sydney: Angus & Robertson; Crown quarto, pp. 54, with illustrations. Price, 6s.

Diary for the Month.

May 25.—Vic. Branch, B.M.A., Eye and Ear Section.
May 25.—N.S.W. Branch, B.M.A., Organization and Science Committee, Medical Politics Committee.
May 26.—Vic. Branch, B.M.A., Council.
May 27.—S. Aus. Branch, B.M.A., Monthly.
May 28.—N.S.W. Branch, B.M.A., Ordinary.
May 29.—Melbourne Hospital Clinical Society.
June 2.—Vict. Branch, B.M.A., Monthly.
June 4.—Q. Branch, B.M.A., Monthly.
June 9.—S. Sydney Medical Association, General.
June 9.—Melbourne Pediatric Society.
June 10.—Vict. Branch, B.M.A., Council.
June 11.—N.S.W. Branch, B.M.A., Clinical.
June 11.—S. Aust. Branch, B.M.A., Council.
June 11.—Tas. Branch, B.M.A., Monthly and Council.
June 15.—N.S.W. Branch, B.M.A., Executive and Finance Committee, Ethics Committee.
June 16.—Vict. Branch, B.M.A., Clinical.
June 18.—Q. Branch, B.M.A., Council.
June 19.—W. Aust. Branch, B.M.A., General.
June 24.—S. Aust. Branch, B.M.A., Monthly.
June 25.—Melbourne Hospital Clinical Society.

Important Notice.

Medical practitioners are requested not to apply for any appointment referred to in the following table, without having first communicated with the Honorary Secretary of the Branch named in the first column, or with the Medical Secretary of the British Medical Association, 429 Strand, London, W.C.

Branch.	APPOINTMENTS.
QUEENSLAND. (Hon. Sec. B.M.A. Building, Adelaide Street, Brisbane).	Brisbane United F.S. Institute. F.S. Lodges at Longreach.
WESTERN AUSTRALIA. (Hon. Sec. 230 St. George's Terrace, Perth).	Swan District Medical Officer. All Contract Practice Appointments in W.A.
NEW SOUTH WALES. (Hon. Sec. 30-34 Elizabeth Street, Sydney).	Australian Natives Association. Balmain United F.S. Dispensary. Burwood District F.S. Institute. Canterbury United F.S. Dispensary. Goulburn F.S. Association. Leichhardt and Petersham Dispensary. M.U. Oddfellows Med. Inst., Elizabeth Street, Sydney. Marrickville United Friendly Societies' Dispensary. Mullumbimby District Friendly Societies. N.S.W. Ambulance Association and Transport Brigade. N. Sydney United F.S. People's Prudential Benefit Society. Phœnix Mutual Provident Society. F.S. Lodges at Braidwood. F.S. Lodges at Casino. F.S. Lodges at Lithgow. F.S. Lodges at Mudgee. F.S. Lodges at Orange. F.S. Lodges at Parramatta, Penrith, and Auburn. F.S. Lodges at Wellington. Killingworth Colliery, Newcastle. Seaham Colliery No. 1, Newcastle. Seaham Colliery No. 2, Newcastle. West Wallsend Colliery, Wallsend.
SOUTH AUSTRALIA. (Hon. Sec. 3 North Terrace, Adelaide).	The F.S. Medical Assoc. Incorp., Adelaide.

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All communcations should be addressed to "The Editor," "The Medical Journal of Australia," B.M.A. Building, 30-34 Elizabeth Street, Sydney, New South Wales.

The following periodicals are required by the Librarian of the New South Wales Branch of the British Medical Association to complete the series for binding. Members who have borrowed these journals are requested to return them as soon as possible.

Lancet, November 7, 1914.
Lancet, November 14, 1914.